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Journal OF THE AMERICAN DIETETIC ASSOCIATION

VOL. 25, NO. 12 DECEMBER 1949

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Helen E. Walsh

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Achieving Quality Food Production in Today's Kitchen

33rd A.D.A. Annual Meeting, Washington, D.C., October 16-20, 1950

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Report of the Executive Board: 1948-49[1]

HELEN E. WALSH

President, The American Dietetic Association, and *Director, Nutrition Service, State Department of Health, San Francisco, California*

IN SUBMITTING a report of the Executive Board for 1948–49, I am gratefully aware of all who have made this encouraging report possible. The continued interest and support of the members this past year in the developments of our Association has resulted in an expanding program.

State and local associations have likewise contributed to the Association's welfare in a manner that is steadily raising the professional status of dietitians throughout the country.

The members of the House of Delegates, the Council, the boards, the committees, and the Executive Board have continued to give our Association the benefits of their wide vision, despite their many duties in full-time positions.

This report would be particularly remiss if it did not salute the loyal office staff who have supported us even when it has meant real sacrifice on their part. Their devotion to their responsibility remains an inspiration to everyone.

The report of the Executive Board for 1948–49 is more than a summary of activities. It is a testimonial to the vision of all of you who have cooperated so generously to provide for the needs of our growing profession.

Briefly, these needs were concerned with increasing our income, reorganizing the Association, strengthening our public relations and vocational guidance program, and studying our membership requirements and internships.

INCREASED INCOME

Based on the expression of the members attending the Boston meeting that they would favor an increase of dues rather than a curtailment of the scope of activity of our Association, your Executive Board conferred with legal council for the Association to determine how this might be done prior to the adoption of a new constitution. We were advised that before the completion of a reorganization plan and the adoption of a new constitution, some changes should be made in the Articles of Incorporation of the Association. We were informed that the amendments to the Articles of Incorporation could be voted upon by the membership at a special meeting which might be called concurrently with the mid-winter meeting of the Executive Board and that we could include in the amendments a change of dues and a change of the fiscal year.

The resolution embodying these changes was sent to the members on January 26, 1949, and a total of 4250 members expressed their wishes with respect to these changes by the use of the proxy. A total of 3347 proxies were cast in favor of the resolution, which provided 513 more affirmative proxies than the required two-thirds.

The effective date for the increase in dues was set by the Executive Board for March 1, 1949, and the fiscal year to start as of June 1, 1949, and to close May 31, 1950. Due to this change in the fiscal year, the full benefit of the increased dues will not be realized this year.

The report of the Chairman of the Membership Committee for 1948–49 shows, for a nine-month period from September 1, 1948 to May 31, 1949, the acceptance of 837 new members, 522 dropped for non-payment of dues, 87 resignations, and 14 deceased, which resulted in an actual increase of 214 members. This may be compared with a total increase of 99 members during a twelve-month period last year from September 1, 1947 to August 39, 1948.

It is quite apparent from the above figures that the majority of the members feel that an investment of $1.25 per month is not too great a price to pay for the protection and promotion of our status as a profession.

REORGANIZATION AND REVISION OF THE CONSTITUTION

The discussion at the membership meeting at Boston and the suggestions received from members during the year made it quite evident that the Constitution Committee should give further study to the reorganization plan and the revision of the constitution. After several conferences and much corres-

[1] Presented at the meeting of members at the 32nd Annual Meeting of the American Dietetic Association, Denver, on October 11, 1949.

pondence, the Committee was successful in working out an acceptable organizational plan on which the revised constitution has been based. The suggested plan of organization will provide for more active participation of a greater number of members in planning and executing the affairs of the Association. Much credit is due the members of last year's committee in working out the fundamental principles which have been carried through by the committee this year.

As you know, the Association for several years has been functioning with an Executive Board, which is the administrative body, and the House of Delegates, which is responsible for state association activities. It is proposed in the new plan of organization to add a third organizational unit to be known as the Coordinating Cabinet.

The Executive Board will be reduced from nine members to the five elected officers of the Association. The four section chairmen formerly appointed by the President will no longer be members of the Board. The Executive Board will continue as the administrative body of the Association.

The House of Delegates will be reduced from one delegate plus one additional delegate for each fifty (50) active members over fifty (50) of the state association to one delegate plus one additional delegate for each one hundred (100) active members over fifty (50) of the state association. In addition to the delegates elected by the state associations, according to their number of members, the House of Delegates will be composed of six delegates-at-large elected by the entire membership.

The Speaker of the House replaces the Vice-President as an elected officer of the Association and a member of the Executive Board. She will preside over the House of Delegates and act as Chairman of the Council of the House of Delegates. The Council will be composed of four delegates, two senior delegates-at-large, and the Speaker of the House.

The function of the House of Delegates will be to study matters of professional interest, initiate activities, implement the program of work, advise on policies, make recommendations through the Council to the Coordinating Cabinet, and advise and assist state associations on administration.

To facilitate the coordination of activities of the House of Delegates and the Executive Board, a Coordinating Cabinet has been created. This body will be composed of the elected officers of the Association, the Council of the House of Delegates, and the four section chairmen. The President of the Association will serve as Chairman.

This body will develop policies and the program of work as well as coordinate the activities of the House of Delegates with those of the Executive Board.

The above are the major changes in our organizational set-up. Other changes include such proposals as a three-year term of office for delegates, a Nominating Committee elected on a geographical distribution plan, establishment of a Dietetic Internship Board instead of three approval committees, and a change in the number of members on the Placement Bureau Board and on the Journal Board.

I trust that you have studied the organizational chart which was published in the September issue of the JOURNAL and the new constitution which was submitted to you early in September and that you have expressed your feeling with respect to this proposed constitution by the use of the proxy.

PUBLIC RELATIONS AND VOCATIONAL GUIDANCE

The continued demand for trained dietitians and nutritionists has emphasized the need for strengthening our public relations program. With the assistance of a consultant in public relations, the Public Relations, Vocational Guidance, and Educational Exhibits Committees have endeavored to meet this need by:

(a) Working more closely with youth and youth leaders.

(b) Interesting members themselves to participate more actively in the program.

(c) Acquainting the business community with the importance of dietetics as a profession and its usefulness to business and the community.

(d) Stressing the importance of dietitians to administrators.

Two publications were prepared to aid in the work with youth and youth leaders. The pamphlet, "Why a Dietetic Internship?" was developed in answer to the many questions most frequently asked by college and university students about the dietetic internships. "Double Feature" was written specifically to catch the interest of the teen-ager in dietetics as a career. "Dietitians in Demand" was revised. It contains more specific information about the profession of dietetics and is suitable for any age level.

Additional material to use in our recruiting program will be the revised issue of "Dietetics as a Profession" and a poster.

To stimulate and provide a means of exchanging ideas, a bi-monthly *Public Relations Newsletter* has been sent to the presidents of state and local associations, public relations chairmen, editors of state bulletins, and press relations chairmen. A *Vocational Guidance Newsletter* has gone to presidents of state associations, professional education chairmen, directors of approved internships, and vocational guidance chairmen.

The response from states to the requests for material to use in these *Newsletters* and the number of articles on public relations and vocational guidance appearing in state bulletins reflect the genuine interest of the members in our program.

Newspapers, the radio, educational exhibits, talks, and special kits for science writers have been the media used for acquainting the public with our profession. A pamphlet designed for use with administrators and allied groups is being reviewed at present and will be off the press shortly.

At the close of our second year of endeavor in the field of public relations, it is important for us to review critically what we have done and decide the direction which we must take in the future in order to realize the greatest benefit to our profession.

MEMBERSHIP REQUIREMENTS

There is an increasing trend in the colleges toward the introduction of broad courses designed for education in "living." This has resulted in the development of units, such as social science and basic biology. These units usually extend through a full year and tend to cross several fields. For instance, social science will include a certain amount of economics, sociology, psychology, anthropology, and other subjects. It is not a clear-cut course in any one of the subjects. These broad courses are apt to be required for graduation and, when they are, will take a large block of the student's time.

A special committee was appointed to study our academic requirements in view of this trend. As a part of the approach to the whole problem of academic requirements, the committee is exploring such source materials as the Report of the President's Commission on Higher Education and is interpreting the content of basic courses being offered by some colleges in partial substitution for fundamental physical, physiological, and social science. The membership of the committee includes Lillian S. Coover, Kate Daum, Margaret Fincke, Helen A. Hunscher, Florance King, Thelma Porter, Anna M. Tracy, Bernice Reaney Varner, and Margaret A. Ohlson, Chairman.

The committee has no concrete recommendations to report at this time. It has been suggested that a survey of college catalogues be made to determine the degree to which these basic courses are required of foods and nutrition students and the coursss which they replace in the curriculum.

The committee has given some consideration, also, to our present basic requirements for membership. They are in agreement that one course in advanced nutrition with science prerequisites should be required in addition to diet therapy. Opinions differ greatly as to whether physiological chemistry and 6 hr. of nutrition should be required of institution management majors and whether institution management should be required for teachers of food and nutrition and of public health nutritionists. At this time it was impossible to take any action.

INTERNSHIPS

The number of internships approved by this Association this year included sixty-two hospital internships, seven administrative internships, and one food clinic internship. A total of 681 interns were enrolled this last year as compared to a total of 662 to be in training this coming year. However, the present internships provide for a total of 776 interns. Why are fewer students taking an internship and is geographic location of the internship a factor?

In an attempt to obtain some information that would be helpful to us in approaching this problem, our Educational Director, Mable MacLachlan, submitted a questionnaire to the heads of home economics departments. Marriage, the desire and need to earn money immediately, the great variety of other positions available at graduation, and the salary scale of dietitians were the main reasons given for not taking an internship. The majority of those who replied to the questionnaire expressed the feeling that there was no need for additional internships, but pointed out that the majority of students wish an internship within a 500-mi. radius of home.

Since our internships are one of the strongest contributions to standards of the profession, we need to review them critically. Indeed, we need to review our entire professional status to point up the profession of dietetics as an attractive career to the undergraduate student.

STATE ASSOCIATIONS

The steady growth and development of our affiliated units is apparent as we follow their activities, read the state bulletins, and have an opportunity to attend state meetings. The increased interest of the individual members in the welfare of the Association is most encouraging. The response to the request for a vote on the amendment to our Articles of Incorporation was gratifying.

There is still much to be done, however, in the development of more efficient administration of state and local associations. It is the wish of the Executive Board that under the new plan of organization, the House of Delegates will be a vital force in strengthening these units.

PROFESSIONAL WORK

Although the chairmen of the sections, boards, and committees will report their own activities in the *Proceedings*, I will comment briefly on their work to draw attention to the scope of our professional program and to the large number of our members who are working on these projects.

Sections

The Community Nutrition Section undertook four projects this year:

(a) Preparation of a series of papers for the JOURNAL on dietary consultation service to institutions without trained food service personnel.

(b) Revision of the *Nutrition Bibliography.*

(c) Planning of a symposium on the need for cooperative relations between nutritionists and other specialists to be presented at the Denver meeting.

(d) Survey of the assistance to institutions without trained personnel and the scope of the work now being done by dietary consultants in official health agencies.

The Diet Therapy Section worked on five projects during the year:

(a) Preparation of dietary lists for physicians.

(b) Evaluation of child feeding practices in the hospital.

(c) Revision of the Glossary of Dietetic Terms.

(d) Survey of practices in feeding in tuberculosis hospitals.

(e) Status of low-sodium diets and sodium values used in calculation.

The Food Administration Section devoted its full attention to the "Training Programs for Subsidiary Workers," because it was considered of such vital importance in view of the shortage of professional personnel.

The Professional Education Section projects have included a study of:

(a) The dietitian in a team for the instruction of medical and dental students in nutrition.

(b) Formulation of objectives for professional preparation of nutritionists for public health.

(c) Nutritional instruction of student nurses.

(d) Assistance to libraries in foreign countries.

(e) The curriculum project which has been carried by the approved course directors.

Boards

The *Investigation* and *Journal Boards* have served in an advisory capacity on advertising and editorial content of the JOURNAL. The *Placement Bureau Board* has been kept informed of the activities of the Placement Bureau and has been encouraged to submit recommendations.

Standing Committees

The following is a list of the eighteen standing committees and a brief statement of the function of each:

(1) *Advisory Service to Foreign Students.* This committee extends advisory assistance in placing qualified foreign students of high scholastic rating and strong personal qualifications in approved dietetic internships.

(2) *The American Dietetic Association Loan Fund for Graduate Study.* Any active member desiring financial assistance for graduate study may make application to this committee for a loan.

(3) *Approval Committees.* The *Hospital, Administrative,* and *Food Clinic Approval Committees* have served in an advisory capacity to the Educational Director. They critically review all submitted reports for dietetic internships and recommend institutions to the Executive Board for final approval.

(4) *By-Laws.* It is the responsibility of this committee to submit to the House of Delegates a set of by-laws or amendments, not inconsistent with our constitution, for the conduct of its business.

(5) *Constitution.* Any revision of the constitution is prepared by this committee and submitted to the membership, which has the power to amend or repeal all or any part of the Constitution.

(6) *Convention.* This committee assumes full responsibility for all local arrangements in connection with the Annual Meeting.

(7) *Marjorie Hulsizer Copher Award.* The names of three outstanding members of the Association are submitted by this committee to the Executive Board and Barnes Hospital, St. Louis, for the final selection of the recipient of the Award.

(8) *Educational Exhibits.* The exhibits displayed at the meetings of allied professional associations are planned and executed under the direction of this committee.

(9) *Finance.* This committee drafts a budget of expenditures for the current year as well as a tentative budget for the following year. It is responsible also for counseling the Executive Board on all financial matters.

(10) *History of the American Dietetic Association.* A review of the activities of the previous year is added to the history of the Association by this committee.

(11) *History of Nutrition and Dietetics.* It is the responsibility of this committee to stimulate interest in the field of history of nutrition and to encourage the collection of material of historic value in nutrition and dietetics for the Association library.

(12) *Legislative Information.* This committee keeps the Executive Board informed of current legislation of interest to our profession.

(13) *Mary Swartz Rose Fellowship.* A qualified member of the Association is named by this committee as recipient for the above fellowship.

(14) *Membership.* It is the responsibility of the Membership Committee to pass upon the credentials and qualifications of each applicant for membership.

(15) *Nominating.* This committee designates the names of the persons to appear on the ballot for all elected officers.

(16 and 17) *Public Relations* and *Vocational Guidance.* All public relations and vocational guidance activities are planned and directed by these committees.

(18) *Publications.* Material prepared for publication under the name of the Association is reviewed and edited by this committee prior to release.

Special Committees

As special situations arise, committees are appointed to study and submit recommendations to the Executive Board for action. This past year the following seven committees have been working on special projects:

(a) *Academic Requirements of the American Dietetic Association.*

(b) *Dietary Study Methods.*

(c) *Revision of the Dietary Section of the Manual of Hospital Standardization of the American College of Surgeons.*

(d) *Acceptance of Gifts from Commercial Firms.*

(e) *The American Dietetic Association Office Organization and Staff Responsibilities.*

(f) *Revision of Quality Food Service Recipes.*

(g) *Revision of Forms for Membership in the American Dietetic Association.*

Joint Committees

The Association has joint committees with the following professional associations: American Hospital Association, American Home Economics Association, School Food Service Association, and the American Diabetes Association.

It is the intention of the *Joint Committee of the American Hospital Association and the American Dietetic Association* to obtain a better understanding of the problems and programs of each group by:

(a) Exchange of information on activities of mutual interest and concern.

(b) Facilitation of efforts being made by either or both appointing associations.

(c) Periodic evaluation of programs for the improvement of hospital food service.

The *Joint School Lunch Committee*, which is composed of representatives of the American Home Economics Association, School Food Service Association, and the American Dietetic Association, has established standards for the selection of school lunch personnel and looks forward to outlining a program at the School Food Service Association meeting in Washington this fall.

The *Joint Committee of the American Diabetes Association and the American Dietetic Association* has worked on "Classification of Foods."

COOPERATION WITH OTHER ORGANIZATIONS

Many invitations have been received this year from allied organizations requesting us to participate in their meetings or to serve as technical consultants on one of their committees. The following are some of these organizations:

American Academy of Political and Social Science
American Association for the Advancement of Science
American College of Surgeons
American Diabetes Association
American Home Economics Association
American Hospital Association
Canadian Dietetic Association
Children's Bureau, Federal Security Agency
Food and Agricultural Organization of the United Nations
Food and Nutrition Board of the National Research Council
National Association of Foreign Student Advisors
Nutrition Foundation, Inc.
United Nations Educational, Scientific and Cultural Organization
United States Department of Agriculture
United States Veterans Administration

THE ASSOCIATION OFFICE

The Executive Board has authorized the appointment of Margaret L. Ross as Director of Professional Activities, and Verna Ansorge McKinley has been given charge of the Placement Bureau.

During the current year, a Committee on Office Organization and Staff Responsibilities has endeavored to develop satisfactory position descriptions for the Executive Secretary and the staff members of the Association's office who are in charge of program. The chart of organization approved by the previous Executive Board was used as the authority for apportioning individual responsibility among these staff members.

Work has been initiated on the development of job descriptions for the other positions and will be turned over to the incoming Executive Board with the recommendation that this study be continued.

In conclusion, may I again point out that we have made progress this year. Your loyal support and thoughtful contributions have made this possible. Your active cooperation has given life to our program.

The trials and errors of last year's experience are behind us. Let us now go forward to meet the future and mold it to our needs.

Yellow Avocados

Food and Home Notes of the U. S. Department of Agriculture recently reported that a new avocado with a yellow skin and flesh has been discovered in the Dominican Republic. A farmer in the Republic's fertile Ciboa Valley notices that one of his avocado trees was bearing yellow fruit. This he reported to a scientist of his government, who in turn discussed it with two U. S. Department of Agriculture scientists.

On their recommendation, a number of young trees of the green variety have been budded successfully with the new yellow type, and if these continue to show promise, avocado growers in this country may become interested.

The yellow avocado is medium sized, the usual pear-shape, has a smooth skin, and the flesh has a butter texture and decided nutty flavor when ripe.

Contributors to Man's Health and Nutrition—Four Centennials

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ALTHOUGH the conquest of deficiency diseases is an achievement of the present century, at least four centuries ago the means of preventing scurvy was known. Yet it was not until 1918 that ascorbic acid in foods was demonstrated, and it was 1932 before the chemical nature of the vitamin was established.

Blane (1749–1834) and Scurvy

Prevention of scurvy is part of the history of naval hygiene. Scurvy was more devastating to sailors than any enemy action; this is well demonstrated by the story of Lord Anson's expedition in 1740 when three-fourths of the crew were lost because of scurvy. This disease was finally eliminated from the British Navy through the influence of Gilbert Blane who was born in Ayrshire, Scotland, two centuries ago on August 29, 1749. Blane was educated at Edinburgh and Glasgow where he obtained his medical degree. He attended the lectures of William Hunter in London and through Hunter's influence became personal physician to Admiral Rodney, and later, Physician of the British Fleet.

Blane cured an outbreak of scurvy in twenty-eight ships by the use of fruit juice, and he recommended the use of lime juice in his book *Observations on the Diseases Incident to Seamen* written in 1785. He was consulted on problems of health of both the Army and the Navy (a rather rare occurrence to serve both these branches of national defense), and was also well known for his services to the civil government. He was created a baronet in 1812, was elected a Fellow of the Royal Society, served as Physician in Ordinary to George IV, and the President of the United States sought his advice and acknowledged his services (1).

Sir Gilbert Blane was an able administrator and a good scientific observer, but he was somewhat austere in his manner, with the result that his more flippant colleagues nicknamed him "Chilblain" (2). His great contribution to naval hygiene was that he was able to have enforced, in 1795, a regulation requiring that fresh fruits and vegetables be used in naval vessels. Scurvy at once disappeared. Blane gave full credit to James Lind (1716–1794) who was the one who demonstrated by experiment the curative effect of fruits and vegetables in scurvy. However, the first record of the use of lemon juice on sea voyages is probably that of the Dutch in 1564. Later in that same century in 1593, Sir Richard Hawkins used it, and John Woodall recommended it in his book titled *Surgeon's Mate* published in 1636 (3).

Such was the slow acceptance of new ideas that it was not until two hundred years after its first successful use that lemon juice became a rule in the British Navy through the efforts of Gilbert Blane.

Takaki (1849–1915) and Beriberi

One hundred years ago was born another man who was to achieve prominence in naval hygiene, and who was to demonstrate that dietary changes could eliminate beriberi as a major cause of death among Japanese sailors.

Kanekiro Takaki, who entered the Japanese Navy as a young medical officer, went to England in 1875 and entered St. Thomas' Hospital, London, where he stayed for five years. On his return to Japan he was made Director of the Tokyo Naval Hospital. Beriberi in the Japanese Navy was a major problem, and the death rate from this disease was high. Takaki studied the problem in different localities where it occurred. He found that beriberi, or *kakké*, occurred at all seasons of the year and without any relation to the state of living quarters or clothing that was worn. Soldiers, sailors, policemen, students, and shop boys suffered most, and the incidence was highest in the large towns but it also occurred in small ones. Takaki next turned his attention to the consideration of food as a possible factor. He found that there was not a sufficient amount of nitrogenous substances present in the diet to make up for the loss of nitrogenous material from the body. The carbohydrate content of the naval diet was high, the ratio of nitrogen to carbon being 1:17—32. The greater the difference in this ratio, the higher was the incidence of beriberi and vice versa.

In 1882 Takaki became Vice Director of the Naval Medical Bureau and proposed a plan for improvement of the naval diet but met with considerable opposition. The following year he was promoted to Director and was able to carry out his great experiment (4). A naval training ship, *Rinjio*, with 276 men and officers sailed from Japan to Wellington, New Zealand, then to Valparaiso, Chile, to Calao, Peru, to Honolulu, and finally back to Japan. The voyage lasted 272 days, and there were 160 cases of beriberi and 25 deaths. The diet was the customary naval one with a ratio for nitrogen to carbon of 1:28. A second training ship, *Tsukuba*, followed the same course and the voyage took 287 days. On this ship the diet had been improved to include more fish and meat thus providing a nitrogen-carbon ratio of 1:15. There were no deaths, but four cadets and ten men who had been unable to eat the meat suffered from beriberi.

Takaki was thus able to demonstrate that dietary improvement could prevent beriberi. He was not the first to suggest a dietary origin for the disease, but he was the first to present definite evidence for such a relationship. He failed to discover the true cause, however, and was misled into believing that the diet's nitrogen content was the determining factor.

Despite this evidence, many medical men still maintained that beriberi was caused by miasmata and that improvements in diet simply strengthened the system against attacks of the disease (4).

Takaki continued his studies on the disease and experimented with dogs maintained on different diets. As a result of his work, an Imperial Ordinance was issued in 1890 providing for an increase in the total dietary allowance per naval man. The amount of rice was markedly reduced, barley and wheat were added, the vegetable allowance was increased, meat and fish were increased, and the milk allowance was raised to $1\frac{1}{4}$ pt. daily. Beriberi was practically eliminated, and there was a marked reduction in diseases of the digestive and respiratory systems and of the eyes.

Takaki was made a baron in 1893. In 1906 (5), he delivered the Cartwright Lecture before the Alumni Association of the College of Physicians and Surgeons (Columbia University), New York City. He died in 1915, just at the time when the "anti-beriberi vitamine" or "water-soluble B" was being demonstrated by McCollum and Davis. More years were to pass before the chemical nature of this vitamin was to be identified by Williams in 1936.

Jenner (1749–1823) and Vaccination

This year is also the bicentennial of the man who successfully introduced vaccination as a means of preventing the spread of that dread disease smallpox. Edward Jenner's application of the knowledge that dairy maids who had had cowpox did not take smallpox has now become a familiar story (2, 3).

Jenner was born in Gloucestershire, the son of a clergyman. He became a pupil and friend of the great surgeon John Hunter. City life did not appeal to Jenner; he loved the country and was a lover of nature, particularly of birds. Of the verses he wrote, "Address to a Robin" and "Signs of Rain" are among the better known. He practiced medicine in his native village of Berkeley for most of his life. It was there in 1796 that he vaccinated his first case, James Phipps, an eight-year-old boy. Later Jenner wrote his book presenting the data on twenty-three cases protected from smallpox by vaccination.

Osler (1849–1919) and Medicine

This year also marks the centennial of a great man of medicine and of letters. He made no contribution to dietetics but for the dietitian, as for the medical student, the life and writings of Sir William Osler stand supreme for inspiration and a way of life, the latter being the title of one of Osler's most widely read essays.

William Osler was born in the backwoods of Canada in 1849, and sometime after obtaining his medical degree, he was appointed to the staff of the Medical School of the University of Pennsylvania. Then he joined Welch, Kelly, and Halsted as the famous four who inaugurated the new standard of medical teaching at the Johns Hopkins University. In 1904 he was appointed Regius Professor of Medicine at Oxford and was later knighted. As physician, teacher, speaker, writer, medical historian, and man of letters, his life is an inspiration to all students.

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Meat Customs in Ancient Greece and Rome

In Greece in the old days, according to *Institions* Magazine, each meat had a special god and the cook in the kitchen had to offer a prayer to each one. . . . Romans of the golden age ate meat to the smell of perfume, provided by slaves who stood by at banquets and sprayed the air with scents which varied with each dish.

Nitrogen, Calcium, Phosphorus, and Basal Energy Metabolism of Obese College Women During Weight Reduction[1]

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THE growing recognition of the dangers and disadvantages of obesity emphasizes the need for information on the metabolic performance of the body during weight reduction. For body weight to be reduced, the caloric intake is decreased and adipose tissue is oxidized, but the effect on physiologic relationships is not limited to energy metabolism alone. A diet for weight reduction should supply the body with all of its nutritive needs with the exception of sufficient calories. Such a diet, however, has certain characteristics which tend to alter the absorption and utilization of several nutrients, and thus alter requirements.

The low fat content of a diet designed to reduce weight may hinder calcium absorption. Boyd *et al.* (1) have shown that fat aids in absorption of calcium by increasing intestinal acidity, and that when the fat intake is reduced, calcium absorption is likewise reduced. A diet low in fat may reduce gastrointestinal motility and thus permit more complete absorption of food. This effect may be counteracted in the diet, however, by a larger amount of cellulose which is likely to increase motility and decrease the coefficient of digestibility. Morgan (2) has shown that increased cellulose ingestion causes a tendency toward increased excretion of nitrogen and a definite increase in excretion of calcium and phosphorus.

Results of studies by Kunerth and Pittman (3) and McCance *et al.* (4) indicate that mineral retention was improved when the protein intake was increased. Brown *et al.* (5) have studied the nitrogen, phosphorus, and calcium retention of eight obese college-age women before, during, and after a period of weight reduction. The subjects' retentions of these nutrients were lower during weight reduction than on the same levels of intake prior to weight reduction, and although they were in equilibrium, they were not storing the nutrients as would have been desirable, or as could have been expected on the amounts provided by the diets. Nor were retentions increased when the intake of calories, nitrogen, calcium, and phosphorus was increased. The authors expressed concern over these young, obese women who, by lowering caloric intake to reduce weight also lowered body stores of these nutrients and thus jeopardized their nutritional future.

Any investigation of weight reduction must include a consideration of the basal metabolic rate. The idea is widespread that excess weight is usually accounted for by a subnormal metabolic rate. The practice of calculating basal metabolic rate on actual rather than on ideal weight contributes to this fallacy. The more excessive the weight, the lower will be the results of the metabolism test when compared with normal standards. Newburgh (6), has reviewed the studies in the literature to show that the basal metabolic rate is almost always normal or above in obesity. There is evidence from the study of Brown and Ohlson (7) which indicates that the basal metabolic rate decreases during and following weight loss. The implications of this decrease are serious in respect to adequate adjustment of appetite and food intake to maintain a normal weight which has been achieved only after a long period of restricted food intake.

Thus, weight reduction by the necessary expedient of reducing calories may initiate many metabolic changes. The present study was planned to investigate the effect of a high-protein diet during weight reduction on the basal metabolic rate, and on retention of nitrogen, calcium, and phosphorus of obese women of college age.

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[2] The authors wish to acknowledge the contribution of materials by the following: Roberts Dairy Company, Lincoln; Gold and Company, Lincoln; University of Nebraska Poultry Husbandry Department; and Chicago Dietetic Supply House, Chicago.

PROCEDURE

Seventeen overweight college women who were students at the University of Nebraska and living in a residence hall volunteered to be subjects for this study. Their ages ranged from seventeen to twenty-four years and they were from 10 to 76 lb. overweight. The subjects were in apparent good health except for excess weight. For eight weeks during the fall of 1947 these subjects ate a controlled, low-calorie diet. Their basal metabolic rate was measured at intervals and their retention of nitrogen, calcium, and phosphorus determined. The subjects were weighed before breakfast, Monday through Friday of each week.

In order to study metabolism on two levels of protein intake, the subjects were divided into two groups. Group I included subjects numbered *1* through *7*, who received a diet which furnished approximately 60 gm. protein daily, and Group II included subjects numbered *8* through *17*, who received a diet which furnished approximately 105 gm. protein daily. Each diet was calculated to furnish 1150 to 1250 calories daily. The additional protein provided Group II was from animal sources; there was some animal protein in every meal for both groups. The regular residence hall diet was adapted to form a reducing diet by simple substitutions or omissions. Changes in desserts and certain other foods were necessary to make the diet low in fat and carbohydrate and yet contain enough bulk to give a high satiety value. The food was prepared and served by members of the nutrition research staff in cooperation with the residence hall personnel. All food was carefully measured, and the meat, eggs, fats, and sugars were weighed. On two week-ends during the eight weeks of controlled diet each subject was permitted a 500-calorie "bonus" which she could spend on any thing she wanted to select from a list of foods and calorie values furnished her.

A basal metabolism room was set up at the residence hall, and the subjects came for their tests immediately upon arising. A Benedict-Roth respiration calorimeter was used, and tests were made about every three weeks. Urinary and fecal collections were made for two consecutive days, Tuesday and Wednesday, in each of the eight weeks. This method was used because it appeared impractical to keep these subjects on a complete metabolism study over a long period of time.

A food composite of serving portions of all food eaten by each group was made for each two-day metabolism period. The urine was collected under toluol and acidified with hydrochloric acid. Feces and food composites were made into hydrochloric acid digests. Food, feces, and urine were analyzed for nitrogen by the macro-Kjeldahl method; for calcium by the McCrudden method as modified by Stearns (8); and for phosphorus by the method of Fiske and Subbarow (9).

Following the period of weighed intake and metabolism studies, the subjects made some effort to restrict the caloric value of their self-chosen diets. During this period the subjects were weighed weekly for nine weeks, and then at the end of twenty-six weeks. Basal metabolic rate was determined at the beginning of this period and again after nine weeks on the self-restricted intake.

RESULTS

In Table 1 are presented the weight losses. For the period of controlled intake, the losses are expressed in terms of average and range for all subjects in each group for each week. Group I lost an average of 1.5 lb. and Group II, 1.7 lb. per week. The variation was great, and there was no significant difference in either the amount or rate of weight loss between groups.

Following the controlled diet, the subjects considered themselves on a self-restricted diet. They were weighed less frequently and, therefore, the results are expressed in terms of total weight change since the previous weighing. The figures indicate the majority of subjects were sufficiently informed and motivated to continue to restrict their food intake.

The basal energy expenditure in calories per 24 hr. for each subject for each test is given in Table 2, together with the means and standard errors for all

TABLE 1

Weight loss of subjects on reducing diets

WEEK	WEIGHT LOSS			
	Group I		Group II	
	Mean	Range	Mean	Range
	Controlled Low-Calorie Diet			
	lb./week	*lb./week*	*lb./week*	*lb./week*
1	3.2	2.0 to 5.0	3.5	1.5 to 6.0
2	2.2	1.5 to 4.0	1.1	+0.2 to 3.5
3	1.8	0.7 to 3.7	2.1	0.5 to 5.0
4	1.0	0.0 to 2.0	2.1	0.5 to 3.8
5	1.0	0.5 to 1.5	0.9	+0.7 to 2.3
6	1.4	0.0 to 3.0	1.8	+0.2 to 3.7
7	0.9	0.5 to 1.2	1.4	+1.0 to 3.5
8	0.5	+0.5 to 2.2	0.9	+1.5 to 3.0
Mean.....	1.5		1.7	
	Self-Restricted Intake*			
2	+0.6	+3.2 to 2.8	0	+2.2 to 3.2
3	1.3	+1.3 to 2.0	0.6	+2.2 to 2.0
4	+0.2	+2.0 to 1.5	0	+2.0 to 2.7
7†	+4.5	+7.0 to +3.0	+3.3	+6.0 to +1.0
8	1.8	+0.7 to 4.5	1.0	+2.0 to 4.0
9	+0.5	+1.0 to 0.5	+0.3	+3.0 to 1.0
26	2.2	+1.0 to 7.5	1.0	+10.5 to 11.5

* Figures indicate total loss since previous weighing.
† Following Christmas vacation.

subjects for each test. Basal metabolic rates calculated on the ideal weight of each subject showed that eleven of the fourteen subjects were within the range of 10 per cent above or below the average for women of this region (10, 11). Subjects *6*, *9*, and *15* were 15 per cent below the average. Although the analysis of variance showed no significant differences between the different tests taken during and following the controlled diet period, certain points warrant mention.

There were slight increases in the averages for each group. The basal calories for only Subjects *1* and *6* in Group I increased more than 100 during the fourteen weeks when tests were made, whereas in Group II the basal calories increased more than 100 for Subjects *8*, *10*, *13*, and *17*. Apparently the ½ grain thyroid given daily to Subjects *9*, *11*, and *15* was not enough to affect their basal metabolic rates.

In Table 3 is shown the average daily intake and retention of nitrogen, calcium, and phosphorus of the different subjects in each group calculated from the two-day metabolism periods for each of eight weeks. Variability in retention from week to week for each subject showed no directional trend and thus permitted averaging all metabolism figures for each subject.

The only significant difference between the metabolism of Group I and Group II was in the nitrogen retention. Group II retained 2.44 gm. nitrogen daily which was significantly more than the 0.31 gm. retained by Group I.

Differences in the average calcium and phosphorus retention of Group I and Group II were slight and not significant. In Group I only Subject *4* was in negative calcium balance to the extent of approximately 10 per cent of the intake, and in Group II

TABLE 2

Measurements and basal metabolism of subjects on reducing diets

SUBJECT	AGE	HEIGHT	WEIGHT	OVER-WEIGHT*	WEIGHT LOSS	CALORIES PER 24 HOURS				
						On controlled low-calorie intake			On self-restricted intake	
						11–21 day of test period	31–42 day of test period	46–55 day of test period	14–22 day of period	31–41 day of period
Group I										
	yr.	*in.*	*lb.*	*lb.*	*lb.*					
1	18	66.5	181	46	15	1282	1435	1414	1469	1402
2	17	61.5	125	10	8		1494	1056	1222	1256
3	18	64.5	153†	29	10	1217	1154			
4	18	67.0	153	18	14	1271	1327	1268	1362	1284
5	19	66.0	175	42	17	1471	1235	1431	1378	1373
6	19	63.0	141	21	12	1161	1039	1099	1173‡	1299
7	19	63.5	137	16	8	1146	1063	1192	1346	1211
Mean			152	26	12	1266 ⁂	1219	1281	1346	1314
Standard error						58.3	75.9	63.8	48.1	75.8
Fiducial limits at 5% level						1048–1484	935–1503	1042–1520	1166–1526	1030–1598
Group II										
8	21	64.5	143	16	12	1257	1154	1306	1326	1444
9	19	65.5	159	31	14	1180	1135	1146	1158‡	1155
10	24	63.0	199†	70	19	1369	1401	1450	1434	1580
11	19	65.0	147	21	8		1145	1166	1166‡	1139
12	18	65.0	153	25	15	1262	1274	1402	1280	1354
13	18	63.0	157	36	12	1263	1290	1348	1407	1592
14	23	64.0	149	23	14	1318	1381	1306	1272	1268
15	18	66.0	170	40	14	1323	1187	1233	1280‡	1263
16	18	66.0	205	75	15	1433	1465	1457	1667	1538
17	18	65.5	165	37	16		1335	1389	1352	1473
Mean			165	37	14	1301 ⁂	1286	1331	1353	1399
Standard error						27.5	43.2	37.9	54.1	58.0
Fiducial limits at 5% level						1236–1366	1184–1388	1241–1421	1225–1481	1263–1536

* Calculated from tables in MacLeod and Taylor (12).

† On diet less than 8 weeks.

‡ Thyroid, ½ grain daily beginning after previous test and continued indefinitely.

⁂ Includes only those with values for 5 periods.

this was true of Subjects *9*, *10*, *11*, and *13*. In Group I, Subjects *4* and *6* were in negative phosphorus balance, and in Group II Subjects *9* and *11* were in slight negative balance.

DISCUSSION

The pattern of weight loss was usual, and no difference between the groups of subjects was apparent. The greatest loss occurred the first week, probably because there was a sharp shift in water balance, followed by a gradual decline in weekly loss. The amount of loss was conservative and safe and did not impair activity.

Because neither group of subjects showed any tendency toward a reduced basal metabolic rate with loss of of weight, there was no opportunity to observe the effect of the high-protein diet on the basal rate. The results of the present study are not entirely comparable with those of Brown *et al.* (5) who had their subjects on a reducing diet for a longer period and determined basal metabolic rate at wider intervals. In the present study the period was long enough, however, to have shown the beginning of any downward trend either during or following the period of the controlled diet.

TABLE 3

Daily retention of nitrogen, calcium, and phosphorus by subjects on reducing diets

SUBJECT	NITROGEN		CALCIUM		PHOSPHORUS	
	Intake	Retention	Intake	Retention	Intake	Retention
	Group I					
	gm.	*gm.*	*gm.*	*gm.*	*gm.*	*gm.*
1	9.85	1.45	1.221	0.203	1.162	0.002
2	9.85	1.94	1.221	0.049	1.162	0.052
3	9.85	−0.05	1.221	0.338	1.162	0.092
4	9.85	−0.58	1.221	−0.215	1.162	−0.158
5	9.85	−0.71	1.221	0.075	1.162	−0.055
6	9.85	−0.20	1.221	−0.008	1.162	−0.179
7	9.85	0.31	1.221	0.306	1.162	0.195
Mean		0.31		0.107		−0.007
Standard error		0.383		0.073		0.051
	Group II					
8	16.70	1.83	1.410	−0.019	1.555	−0.038
9	16.70	0.38	1.410	−0.241	1.555	−0.141
10	16.70	2.98	1.410	−0.376	1.555	−0.098
11	16.70	2.12	1.410	−0.199	1.555	−0.104
12	16.70	3.02	1.410	0.251	1.555	0.202
13	16.70	3.16	1.410	−0.137	1.555	0.078
14	16.70	2.09	1.410	0.204	1.555	0.194
15	16.70	3.84	1.410		1.555	
16	16.70	2.07	1.410		1.555	
17	16.70	2.92	1.410		1.555	
Mean		2.44		−0.074		0.013
Standard error		0.304		0.088		0.054

The retentions of nitrogen, calcium, and phosphorus by the two groups of subjects are of special interest because of the needs of this age group. The nitrogen intake of Group II was 70 per cent higher than that of Group I; 30 per cent of this increase was retained, resulting in a retention eight times greater than that of Group I.

The failure of five of the seven subjects in Group II to store calcium on the generous intake of 1.41 gm. daily may be a reflection of the extremely low fat content of the diet. Group II received an average of 34 gm. fat daily. They were served no table fat and the butterfat was limited to the amount remaining in the skim milk and plain cottage cheese. On the other hand, Group I received 43 gm. fat daily, of which 25 gm. was butterfat. Since butterfat yields more fatty acids than other fat, the difference may be greater than suggested by the difference in amount of fat in the two diets.

The figures for the phosphorus retention were similar for both groups despite the higher intake of Group II, and neither group showed significant storage of phosphorus. The phosphorus figures are difficult to interpret because excretion of phosphorus in excess of the intake may be accounted for by its release from fatty tissues which have been oxidized for energy. Also the lack of fatty acids in the intestinal tract may have led to the formation and the excretion of calcium phosphate and thus interfered with phosphorus absorption.

Comparison of the metabolism figures from the study with those of McKay *et al.* (13) on normal college-age women indicates that on the same level of intakes: (a) the nitrogen metabolism was similar, and (b) the normal subjects retained more calcium and phosphorus than those subjects who were losing weight.

The effect of the moderate and high level of protein intake on the well-being of the subjects could not be measured objectively. Careful observation and daily notations of the supervisors, however, gave subjective evidence of a difference. The subjects in Group II with the high-protein intake did not complain of fatigue or ask for additional food, and they rated themselves as healthy and satisfied. In Group I on the moderate-protein intake, the subjects without exception complained frequently of fatigue, fretted about the diet, and rated themselves as mildly dissatisfied.

The findings of a study such as the present one do not lead to specific recommendations for the perfect reducing diet as much as they highlight some of the physiologic problems and suggest the need for further work. In the reducing diet for the obese woman of college age, special attention must be given to furnishing enough calcium and phosphorus and to the factors which may affect their absorption. A high level of protein seems desirable for the feeling of well-being, and yet if protein furnishes too large a

proportion of the calories, fat is reduced to an undesirably low level which in turn may interfere with calcium and phosphorus absorption. Further work on metabolism during weight reduction is now in progress.

SUMMARY AND CONCLUSIONS

For eight weeks seventeen college women, 10 to 76 lb. overweight, were on supervised reducing diets which were adequate in all respects except calories, and contained sufficient calcium, phosphorus, and nitrogen to promote storage in this age group. The subjects were divided into two groups: Group I received a diet which furnished approximately 60 gm., and Group II, 105 gm. protein daily. Loss of weight, basal metabolic rate, and the intake and excretion of nitrogen, calcium, and phosphorus were measured. The average weekly loss per person was 1.5 lb. for Group I and 1.7 lb. for Group II. There were no significant differences between the average performance of the two groups in weight loss, basal metabolic rate, or calcium or phosphorus retention. However, four individuals in Group II were in negative calcium balance as compared to one individual in Group I. Two subjects in each group were in negative phosphorus balance. Group II retained significantly more nitrogen than Group I. The implications of these results are discussed.

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Techniques in Changing Food Habits

Food is eaten because it promises something more gratifying than health. It is eaten for enjoyment, for emotional release, for social prestige, for attention, adverse or otherwise. Food is refused because of unconscious emotions, for the pleasure or paining others, and to show self-assertion.

It takes educational finesse to change food habits. Mere health is no motive, but desire for a reputation for wide social experience may be. Or, if young people can be made to believe that food refusals are childish reactions, they will accept new or even disliked foods just to prove themselves emotionally mature. Logical, well-supported reasons for making a change in food habits may also be effective, but intelligence in revising food habits will be used only to the point that it does not conflict with emotions or prestige.

Emotional attitudes toward food begin with babyhood, and it is at this point that psychology can be most effectively applied. The infant who does not sense affection while he is being fed or who has been distressed or unduly hungry is likely to become a food problem and remain one. If a child anticipates adverse reaction, such as a mother's critical attitude toward his food habits or lack of coordination at meal time, his actions become subversive and he protests by food refusals. The child who eats well has been blessed with an understanding mother.

If mothers and young girls look upon each addition to an infant's diet as an educational step, not as a nutritional necessity, tensions that produce conditioned malnutrition might be prevented. If we emphasized the difficulty involved in learning to drink from a cup, to get a sticky food from a spoon with the tongue, to handle utensils, or to accept new flavors, there would be fewer children refusing foods and courting undernutrition.—*From an address by Dr. Jennie I. Rowntree, Director, School of Home Economics, University of Washington, before the American Home Economics Association in San Francisco, June 30, 1949.*

Comparison of Meat and Legumes in a Controlled Feeding Program

VI. Seven-Month Study of Twenty-four Children[1]

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MACK, Tomassetti, and Shevock (1) have described a fourteen-month study involving two groups of orphanage children, in which dietaries were fed which met or exceeded the recommendations of the Food and Nutrition Board, National Research Council (2), and which were closely comparable with each other on a calculation basis, differing only in that one group ingested meat (with one-tenth as liver) ten times weekly and the other twice. Mack (3) has reported a fourteen-month extension of the former study during which the dietaries of the two institutions were reversed.

In both phases of the complete twenty-eight-month investigation the children on the higher meat and liver intake surpassed the others in numerous respects which the authors described.

This report covers two groups of twelve children each who entered the respective orphanages during the second period of the study, and who were tested approximately at the time of entry and again seven months later. The twelve children in Institution I came under the higher meat and liver program; those entering Institution II, on the other hand, partook of the low-meat-and-liver dietary, with dried legumes and other vegetable products compensating on a calculation basis for meat in the eight meals on the menu of Institution I.

These two new small groups were tested at the times mentioned for the purpose of gaining further information on the physical status of growing children on two levels of meat intake, with the dietaries similar in caloric and nutritive value on a calculation basis.

The new entries were similar to the larger groups of children when this investigation was begun, in that dietaries generally had been inadequate. During the seven-month period of this study, therefore, improvement in certain respects could be expected with both groups, with the degree of change the chief point of investigation.

MEDICAL, DENTAL, AND LABORATORY OBSERVATIONS AND TESTS

The new children in both orphanages represented both sexes and ranged in age from six to twelve years. The sex-age composition of both groups was similar.

The medical, dental, laboratory, and functional tests and observations given to these groups were the same as those used in the two fourteen-month studies previously described (1).

FINDINGS AND OBSERVATIONS

The medical examiner failed to find *eye lesions* in either group either at the initial or the final test period. By means of the biomicroscope, the percentage of examined *areas of the conjunctiva* (twelve in each eye) which initially were adjudged to be markedly translucent or opaque decreased 43 per cent in the children on the higher meat and liver intake, and increased 47 per cent in the low-meat-and-liver intake group.

Histological slides of the *epithelial tissues* of the oral cavity taken from the base of certain of the salivary glands averaged Class 2.3 initially and 1.5 finally for children in Institution I; and the ratings averaged 2.3 initially and 2.3 finally for those in Institution II. In Figure 1 this comparison of epithelial ratings is shown graphically.

The *tongue* was recorded as having markedly less atrophy, proliferation, and hyperemia of the fungiform and of the filiform finally than initially in children of Institution I (higher meat and liver intake), and less involvement of the entire tongue, including fissuring, hyperemia, and dryness. In the new group in Institution II, on the other hand, the tongue was

[1] This paper is one of a series of reports on nutrition studies of institutionalized children conducted by the Ellen H. Richards Institute under the auspices of the Department of Health, Commonwealth of Pennsylvania. The study was assisted by a grant-in-aid from the National Live Stock and Meat Board. Received for publication April 4, 1949.

TABLE 1

Medical observations on body status

MEDICAL OBSERVATIONS	INSTITUTION I (Meat 10 times weekly)		INSTITUTION II (Meat 2 times weekly)	
	Test I	Test II	Test I	Test II
GLANDS				
Cervical				
Adverse findings from gross examination; percentage of children exhibiting				
Enlarged anterior	50.0	8.3	8.3	24.9
Enlarged posterior	16.7	8.3	8.3	24.9
SKIN				
Adverse findings from biomicroscope examination; percentage of children exhibiting				
Dryness				
None	0.0	42.1	8.3	41.7
Slight	83.3	41.2	83.4	50.0
Intermediate	16.7	16.7	8.3	8.3
Severe	0.0	0.0	0.0	0.0
Thickening				
None	0.0	41.7	8.3	50.0
Slight	83.3	58.3	91.7	50.0
Intermediate	16.7	0.0	0.0	0.0
Severe	0.0	0.0	0.0	0.0
Follicular hyperkeratosis				
None	8.3	91.7	83.3	75.0
Slight	75.0	8.3	16.7	25.0
Intermediate	16.7	0.0	0.0	0.0
Severe	0.0	0.0	0.0	0.0
Follicular hyperkeratosis with black spines				
None	25.0	100.0	83.3	100.0
Slight	41.7	0.0	16.7	0.0
Intermediate	8.3	0.0	0.0	0.0
Severe	0.0	0.0	0.0	0.0
Hyperemia				
None	75.0	100.0	100.0	100.0
Slight	25.0	0.0	0.0	0.0
Intermediate		0.0	0.0	0.0
Severe		0.0	0.0	0.0

rated by the medical examiner as poorer in condition finally than initially.

The biomicroscopic examination of the tongue revealed the same trend with respect to acute lesions as was recorded by the medical examiner.

Both new groups improved sharply in the condition of the *gingiva* during the study, both as reported by the medical examiner and as seen by means of the biomicroscope.

The number of children in both groups with *inflammation of the pharynx* and in *nasal discharges* other than a common cold decreased. Neither group had many cases of involvement in these two respects initially.

Cerumen was found in the *ears* of 25.0 per cent of the subjects in both institutions initially. This number dropped to zero at the time of Test II in Institution I, but had not changed in Institution II.

The conditions of *palpability* or *enlargement of the cervical glands* are shown in Table 1. The percentage of children in Institution I with these conditions, initially poorer in this respect, decreased and the percentage in Institution II increased.

In the medical examination of the *skin*, the original 41.6 per cent of the children in Institution I exhibiting slight or moderate papular roughness was reduced to 33.1 per cent, whereas in Institution II the percentage increased from 16.7 to 41.6. In Institution II, 16.6 per cent of the children initially with acne continued with this disorder.

By means of the biomicroscope, two disorders of the skin generally found in all-around poor nutrition (unusual *dryness* and unusual *thickening*) were found in 100.0 per cent and in 91.7 per cent, respectively, of the children (Table 1) in Institutions I and II. In both groups there was a marked improvement in both of these factors, due to the children receiving dietaries which were better than their former foods in both institutions. With respect to *follicular hyperkeratosis*, with and without black spines, however, the skin condition became markedly better in Institution I and poorer in Institution II during this seven-month study. This unquestionably was related at least in part to the superior form of vitamin A in liver as compared with the pro-vitamin of green and yellow vegetables. Follicular hyperkeratosis with black spines, initially worse in Institution I, was not found in any subject in either group finally.

Hyperemia of the skin, not found in any of the new group in Institution II and in only three children (25.0 per cent) of those in Institution I was absent in both groups at the close of the study.

The percentage of children who were *underweight* for their sex, age, and body size according to the Pryor standards (4, 5) was 25.0 per cent for Institution I and 8.3 per cent for Institution II at the beginning of the study. There was a decrease to 8.3 per cent in Institution I with no change in Institution II during the seven-month period.

Growth was much improved in Institution I, with more than one-half of the children showing marked improvement in physique channels and in the development level per month of age, according to the Wetzel grid (6). Only 25.0 per cent of those in Institution II showed this favorable change.

As in the other groups in this investigation, a high percentage of children in both orphanages gave skeletal evidence of past undernutrition dating back to infancy. Thus more than three-fourths of both groups exhibited deformities of the head and chest, such as Harrison's groove, frontal bossing, and rachitic rosary, with more than 90.0 per cent showing major or minor leg deformities, such as bowed legs and knocked knees. In most subjects, these marks are never eradicated entirely, although skeletal maturity and mineralization are amenable to change with better or poorer dietaries.

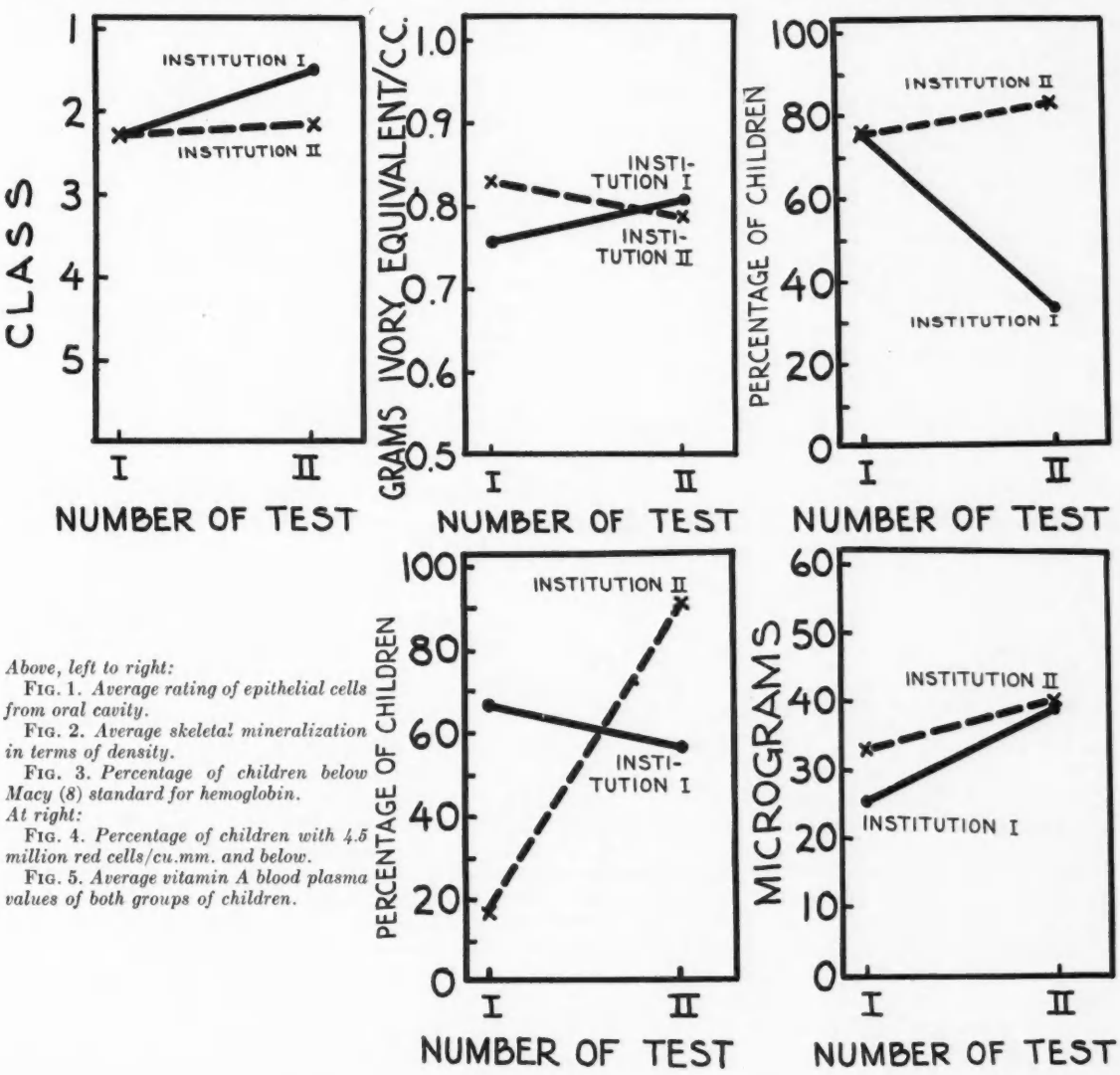
In *skeletal maturity* as judged by the Western Reserve standards (7), one-third of the children in Institution I and one-half in Institution II were in the first class, or exhibited a degree of skeletal maturation comparable with their sex and age. During the seven months of the study there was no improvement in Institution II in this respect, and only a shift of one child in Institution I, in this case to a more favorable classification.

In *skeletal mineralization*, however, a significant shift took place. The initial average mineral density factor for the os calcis for those in Institution I (the higher meat and liver group) was 0.7619 gm. ivory per cubic centimeter of bone. That for Institution II was higher, namely 0.8090 gm. ivory per cubic centimeter of bone.

After seven months, the average skeletal density values for children in Institution I had risen to 0.8090 gm. and that of Institution II had fallen to 0.7935 gm. This shift is shown graphically in Figure 2.

In dental status, the changes in DMF values in both groups were somewhat less unfavorable than those of Pennsylvania children in general who have been included in a state population survey of fifteen years continuous history. There were no notable differences in the two groups in this respect.

Hemoglobin average values improved in Institution I and remained approximately the same in Institution II. The children meeting or exceeding the Macy (8) hemoglobin standard for children of 13.0 gm. per 100 cc. blood rose from 25.0 to 66.7 per cent in the first and fell from 25.0 to 16.7 per cent in the second institution. The data for hemoglobin averages and distributions are given in Table 2.



Above, left to right:

FIG. 1. *Average rating of epithelial cells from oral cavity.*

FIG. 2. *Average skeletal mineralization in terms of density.*

FIG. 3. *Percentage of children below Macy (8) standard for hemoglobin.*

At right:

FIG. 4. *Percentage of children with 4.5 million red cells/cu.mm. and below.*

FIG. 5. *Average vitamin A blood plasma values of both groups of children.*

TABLE 2
Summary of blood and urine tests

LABORATORY FINDINGS	INSTITUTION I (Meat 10 times weekly)		INSTITUTION II (Meat 2 times weekly)	
	Test I	Test II	Test I	Test II
HEMOGLOBIN				
Average gm./100 cc. blood	11.8	13.0	12.7	12.6
Range; percentage of children with values of				
13.00 gm./100 cc. blood and above (Class 1)	25.0	66.7	25.0	16.7
12.99 to 11.50 gm./100 cc. blood (Class 2)	33.3	33.3	75.0	82.3
11.49 to 10.00 gm./100 cc. blood (Class 3)	33.3	0.0	0.0	0.0
9.99 to 8.50 gm./100 cc. blood (Class 4)	8.4	0.0	0.0	0.0
Below 8.50 gm./100 cc. blood (Class 5)	0.0	0.0	0.0	0.0
ERYTHROCYTE COUNT				
Average millions of red cells/cu. mm. blood	4.18	4.32	4.78	4.11
Range; percentage of children with erythrocyte counts of				
4.76 million/cu.mm. blood and over (Class 1)	8.3	16.7	58.3	0.0
4.75 to 4.51 million/cu.mm. blood (Class 2)	25.0	25.0	25.0	8.3
4.50 to 4.26 million/cu.mm. blood (Class 3)	67.7	41.6	16.7	25.0
4.25 to 4.01 million/cu.mm. blood (Class 4)	0.0	16.7	0.0	25.0
4.00 million/cu.mm. blood and below (Class 5)	0.0	0.0	0.0	41.7
Percentage of children in Classes 3, 4, and 5 (4.5 million/cu.mm. and below)	67.7	58.3	16.7	91.7
URINARY THIAMINE				
Average mcg./1 hr. fasting sample	7.00	10.37	11.04	7.05
Range; percentage of children with thiamine values of				
6.0 mcg. and above (Class 1)	58.4	91.7	91.7	83.4
4.5 to 5.99 mcg. (Class 2)	33.3	8.3	8.3	8.3
3.0 to 4.49 mcg. (Class 3)	8.3	0.0	0.0	0.0
1.5 to 2.99 mcg. (Class 4)	0.0	0.0	0.0	0.0
1.49 mcg. and below (Class 5)	0.0	0.0	0.0	8.3
URINARY RIBOFLAVIN				
Average mcg./1 hr. fasting sample	55.64	50.73	71.81	48.21
Range; percentage of children with riboflavin values of				
60.00 mcg. and above (Class 1)	50.0	58.3	50.0	16.7
59.99 to 45.00 mcg. (Class 2)	8.3	8.3	33.3	16.7
44.99 to 30.00 mcg. (Class 3)	16.7	16.7	16.7	50.0
29.99 to 15.00 mcg. (Class 4)	16.7	16.7	0.0	8.3
Below 15.00 mcg. (Class 5)	8.3	0.0	0.0	8.3

In Figure 3 a graphic representation of the percentage of children in the two groups who were below the Macy standard is given.

Red cell count average values initially were lower in Institution I than in Institution II. They rose in the former and fell in the latter, as did also the percentages of children in the higher ranges of erythrocyte or red cell count values (Table 2). The percentage of children with red cell counts of 4.5 million per cubic millimeter and below (the Macy standard [8]) is shown in Figure 4.

In *packed cell volume* (hematocrit), no notable change was found in either group. Initially, the children in Institution I were slightly superior in this respect.

The *differential cell counts* in both groups were essentially within the normal limits at both test periods for both groups.

Blood plasma vitamin A values improved with both institutional groups, those in Institution I making more progress. The average values for the higher meat and liver group increased 53 per cent, while those on the lower intake increased only 20 per cent. The children in the highest range of blood plasma vitamin A intake levels (35.5 mcg. per 100 cc. of blood plasma) increased 8-fold in Institution I and 1.5-fold in Institution II. The average blood plasma vitamin A values for both groups of children at the two test periods are shown in Figure 5.

Blood plasma carotene showed some improvement in both institutions, with no notable differences between the two groups. *Blood plasma ascorbic acid* values also improved in both groups.

Blood serum total protein values, originally good, improved in both groups about to the same extent. *Serum albumin* values became slightly better in Institution I.

Serum globulin values tended to decrease slightly in Institution I, however, but showed some increase in Institution II. As a consequence, the *albumin-globulin (A/G) ratios* became more favorable (according to standards previously described in this series) in Institution I than in Institution II. Thus the children with A/G ratios approximately of 2.5:1 rose in Institution I from 16.7 to 41.7 per cent and in Institution II from 8.3 to 16.7 per cent.

No children in either institution showed an unfavorable *blood phosphatase* level at either test period.

Urinary thiamine excretion values initially averaged higher for children in Institution II than I, also with a higher percentage of children in the highest arbitrary thiamine excretion range. At the second test, the average thiamine in the urine had increased markedly for Institution I and decreased for Institution II. The urinary thiamine excretion values are given in Table 2.

Urinary riboflavin excretion values were higher initially for Institution II than I, although the same percentage of children were in the highest arbitrary range of values. The riboflavin excretion averages in Institution I remained approximately the same, whereas those in Institution II decreased markedly (Table 2). The percentage of subjects in the highest excretion level increased slightly in Institution I and decreased markedly in Institution II.

In the *functions* which were observed, children in Institution I showed a greater improvement throughout. The percentage of children with *unsatisfactory reflexes* decreased 50.0 per cent in Institution I and remained the same in Institution II.

In scores given by the examining physician for *absence of fatigue*, both groups showed approximately the same favorable change. In *push-up* scores for boys (no norms were available for girls), the boys in Institution I were far superior finally to those in the second orphanage.

Dark adaptation scores improved slightly from an average class of 2.6 to 2.2 in Institution I and became somewhat poorer in Institution II, from an average class of 2.5 to 2.7. In this classification system, Class 1 is highest and Class 5 poorest.

SUMMARY

Two groups of twelve children, each representing both sexes and an age range from six to twelve years, entered orphanages in which studies of meat levels were in progress. These children were tested approximately at the time of entry into the respective orphanages and again after seven months in order to gain further information on the physical status of growing children when one group received meat ten and the other two times weekly (one-tenth of the meat consisting of liver in both cases).

The findings confirm those of previous reports in this series. Whereas both groups improved in numerous factors, children in Institution I on the higher meat and liver intake were superior at the close of the study in the following:

(1) Condition of the conjunctiva
(2) Condition of the epithelium
(3) Condition of the tongue
(4) Absence of cerumen in the ears
(5) Condition of the cervical glands
(6) Condition of the skin
(7) Weight for the sex, age, and body size
(8) Growth
(9) Skeletal mineralization
(10) Hemoglobin
(11) Red cell count
(12) Blood plasma vitamin A
(13) Serum albumin (slight)
(14) Albumin-globulin (A/G) ratios
(15) Thiamine excretion levels
(16) Riboflavin excretion levels
(17) Satisfactory reflexes
(18) Absence of fatigue
(19) Dark adaptation

Children on the low-meat regimen were not superior finally to the former group in any respect for which observations and tests were made.

The findings were consistent with the superior amino acid distribution in meat as compared with that in vegetable products, the higher biologic value of animal protein, the better utilization of vitamin A in liver than in vegetable sources, the greater quantity of fat (containing unsaturated fatty acids) in the higher meat dietary, the greater amount of folic acid and of vitamin B_{12} in the higher meat and liver regimen, and the possibility of other factors as yet not identified in liver.

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Cooked Turkey Yields

The Bureau of Human Nutrition and Home Economics and the Bureau of Animal Industry of the Department of Agriculture cooperated in a study to determine yields in meat of Beltsville Small White and Broad Breasted Bronze turkeys after roasting at low to moderate temperatures in uncovered pans. All birds in the study were New York dressed.

The total yields after boning, including white and dark meat, skin with the fat clinging to it, plus giblets and meat from the neck were: Beltsville Small White toms, weighing an average of 13 lb. New York dressed, averaged 47 per cent cooked edible portion. Hens of the same variety, averaging 7 lb., gave a yield of 53 per cent. For toms of the Broad Breasted Bronze variety with an average New York dressed weight of 25 lb., the average total meat yield was 48 per cent; for hens averaging 13 lb., 48 per cent.

Cooked yields of white and dark meat—without bone, skins, neck, or giblets were: for Beltsville Small White toms, an average of 34 per cent, for hens, 41 per cent; for the Broad Breasted Bronze toms, 35 per cent, for the hens, 38 per cent.

Giblets accounted for 2½ to 3 per cent of the original New York dressed weight, and the meat from the neck, 2½ to 3 per cent. The cooked skin with fat clinging to it accounted for 6 to 8 per cent.—*From Food and Home Notes, November 10, 1948.*

Antacid Efficacy *in Vitro* of Some Foods Commonly Used in Peptic Ulcer Diets[1]

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CRITERIA commonly used for the selection of foods in the peptic ulcer diet have been avoidance of chemical, thermal, and mechanical trauma and the meeting of nutritional requirements. The criterion of ability to neutralize acid which is most important, and is so evaluated during activity of the ulcer as in Sippy diets, is usually lost sight of during periods of convalescence. Indeed, little is known about the efficacy of foods as antacids except that in general it is theoretically proportional to protein content.

Bridges and Mattice (1) determined the *p*H of 2000 foods, but this value does not indicate buffer capacity. Rossett and Flexner (2, 3), utilizing a continuous recording *p*H meter, evaluated the efficacy of various antacids, milk, and cream, *in vitro* and in the human being. Their comparison of *in vitro* and *in vivo* titrations permitted the conclusion that *in vitro* titrations were adequate to determine antacid efficacy in the human stomach.

This study was undertaken to determine the buffer capacity, using the method of Rossett and Flexner, of the following foods: boiled egg, oatmeal, white, whole wheat, and rye bread, and raw and cooked beef. A recently introduced antacid, "Resinat," (an ion exchange phenolic resin) was used for comparison with the above foods.

METHOD

These foods were used in portions commonly served (raw and cooked beef, 90 gm.; one egg, 50 gm.; oatmeal, 30 gm. dry weight; and single slices of rye, white, and 60 per cent whole wheat bread, weighing 30, 25, and 28 gm., respectively); the antacid used was the amount recommended as an average dose (Resinat, 1 gm.). We mixed material to be tested thoroughly for 1 min. in a Waring Blendor with 30 cc. N/10 hydrochloric acid to which 70 cc. distilled water had been added to simulate the fasting contents of the hyperchlorhydric stomach (*p*H 1.4) and allowed to stand for 13 min. It was then blended for 1 min. and a small sample withdrawn for *p*H measurement. To simulate conditions of secretion in the hyperchlorhydric stomach 30 cc. N/10 hydrochloric acid was added to the mixture and the procedure of mixing for 1 min., allowing to stand for 13 min., and mixing for 1 min. again for sampling was repeated until the *p*H had fallen to 1.4, the starting point.

RESULTS

In Figure 1 are demonstrated the superimposed titration curves obtained by this method of the indicated foods and for comparison 1 gm. "Resinat." It will be noted that one egg compared poorly with 90 gm. beef. Raw beef had an initial *p*H of 5.9 and cooked beef, 6.2. The curve for raw beef was omitted because it is almost identical with that for cooked beef. Among the cereals, oatmeal was found most effective, followed by rye, white, and dark bread in that order. Oatmeal had an initial *p*H of 6.9, while

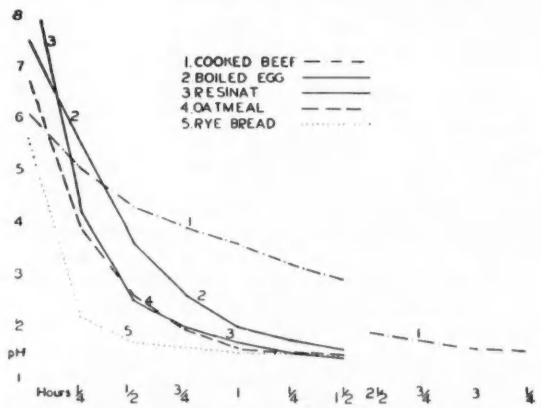

FIG. 1. *Comparison of titration curves of four foods commonly used in peptic ulcer diets and Resinat.*

[1] Sponsored by the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published by the authors are a result of their own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

the breads all had an initial *p*H of 5.0. The curve for only rye bread is shown, the described differences being too small to show clearly on a graph.

DISCUSSION

The graph shows that the antacid efficacy of the foods tested was directly proportional to their protein content. The portion of beef used contained 16.4 gm. protein; the egg, 6.4 gm.; oatmeal, 4.3 gm.; whole wheat, 2.5 gm.; white bread, 2.1 gm.; and rye bread, 1.9 gm. Cooked or raw beef, one egg, and a portion of cereal proved to be more effective antacids than a 1-gm. dose of "Resinat" under the conditions of the experiment. Possible secretagogue effect has not been evaluated.

SUMMARY

The efficacy as antacids of some foods used in peptic ulcer diets has been evaluated, using a *p*H meter and a simulated hyperchlorhydric stomach.

Raw and cooked beef, a boiled egg, 30 gm. oatmeal, and single slices of whole wheat, white, and rye bread had a buffering effect directly proportional to their protein content which decreased in the order listed.

Usual portions of beef, egg, and oatmeal proved to be better antacids than 1 gm. Resinat.

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Plasma Levels of Amino Acids in Aging

Evidence that amino acid metabolism in aging men and women may be different was given at the 116th national meeting of the American Chemical Society held in September in Atlantic City.

In a paper read before the Division of Biological Chemistry, Dr. Philip G. Ackerman, Lilli Hofstatter, and William B. Kountz, Washington University School of Medicine, Division of Gerontology, St. Louis, and the St. Louis Infirmary Hospital, reported on a broad study of the protein requirements of elderly persons.

Their paper said: "Old people are in general less active and use less muscular tissue. In addition, there is usually some actual decrease in the amount of muscle in old age. Some of our earlier studies have indicated that old people still have a great need for protein foods, such as meat, eggs, and milk. What appeared to be an adequate protein intake for a younger person was not always suitable in the old. When placed on a very high protein diet, a number of our elderly patients showed marked clinical improvement; they felt better and became more active.

"Apparently old people are less efficient in utilizing protein. Their protein metabolism may also be altered. One of the studies made in the investigation of the protein metabolism in the aged was the measurement of the concentration of some of the free essential amino acids in the blood of old individuals as compared with that of the young. Men and women were compared separately, since earlier studies had indicated that the two sexes sometimes respond differently in aging."

The paper reported on the measurement of the concentrations of eight of the essential amino acids in the blood plasma of young and old individuals, and explained that "since these amino acids are present in relatively small amounts (approximately 1/300 oz. or less in all the blood plasma of an average individual), a microbiologic technique was employed.

"We found that the two sexes showed different changes. In one amino acid, threonine, we found no change in either sex with age. In isoleucine, we found a decrease in both sexes with age. In the other six amino acids studied, the change with age was different in the two sexes.

"For three—valine, tyrosine, and leucine—we found a decrease in men, but no change in the women. For tryptophan and lysine, we found a decrease in the women, but no change in the men. For histidine, we found an increase in women but no change in the men.

"The causes of these changes and their relation to the actual clinical state of the subjects remains a problem for further study. We do know that the incidence of the diseases occurring in old age is often different in the two sexes. Heart disease, for instance, is more common among men and arthritis among women. This suggests that the degenerative changes in aging may run a somewhat different course in men than in women. The results of the study may also be subject to the same interpretation."

Thiamine and Riboflavin Retention in Beef During Roasting, Canning, and Corning[1]

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MANY of the early investigations in meat research dealt with the relation of animal feeding techniques to the quality of the beef produced. Recently, emphasis has been placed on the nutritive value, but to date few investigations have been reported on this phase. This project was undertaken to ascertain the changes produced by varying the type of feed and the subsequent effect of roasting, canning, and corning on the thiamine and riboflavin content of beef.

EXPERIMENTAL PROCEDURE

Processing

The beef was obtained from twenty-four two-year-old Hereford steers that had been on controlled feeding experiments conducted by the Department of Animal Industry. Eleven were "finished" on Montana grass while groups of two, five, and three were fed a barley and beet-pulp combination for the last 60, 90, and 180 days, respectively. Three steers were fed the grain mixture throughout the experimental period. After slaughtering, the meat was allowed to age in a dark room at 33° to 35° F. for ten days.

Roasting Procedure. The right and left tenth to eleventh standing-rib cuts from each of the twenty-four animals were selected for roasting. The eye muscles of the twelfth rib cuts were analyzed chemically in the raw state. In the preliminary studies, the right cut was roasted to an internal temperature of 176°F. in an open pan at 300° and the left cut at 500°F. In the next series all roasts were cooked at 325°F. to an internal temperature of 176°F. The outer portions were discarded, and samples were taken from the remainder of the eye muscle of the cooked roast (about 250 gm.).

Canning Procedure. Lean beef round was cut into pieces, browned in an open pan in the oven for 30 or 50 min. and packed hot into either pint glass jars or No. 2 metal cans. Two processing times and temperatures were used: the first, 85 min. at 250°F. following the earlier recommendation of Stanley (1); and the second, 60 min. at 240°F., according to more recent directions of the Department of Agriculture (2). Some of the canned meat was analyzed immediately and the remainder stored in a cool, dark place (40° to 50°F. for four months). The entire contents of the jar or can were sampled.

Corning Procedure. Large pieces of beef round were cured for 60 days in a brine consisting of 2 gal. water, 4 lb. salt, 1.5 lb. sugar, 2 oz. baking soda, and 1 oz. saltpeter. Representative samples were then removed for the analysis of the raw material, and the remainder was boiled for 3 hr. before testing.

Methods

Sampling Procedure. Each type of sample was trimmed to remove adipose and connective tissue, then finely ground three times, mixing thoroughly between each grinding. Samples were removed for moisture, fat, and ash determinations, and the remainder was packed into covered aluminum boxes and frozen immediately. Thiamine and riboflavin were determined on the frozen samples within two weeks.

Moisture, Ash, and Crude Fat. Samples were analyzed for moisture, ash, and crude fat following accepted methods of the Association of Official Agricultural Chemists (3). In Series *1* (Tables 1 and 2), the fat was extracted with a Soxhlet apparatus, while in Series *2* (Tables 1 and 2), a Caldwell extraction apparatus was used.

Thiamine. Thiamine was determined by the thiochrome method of Hennessy (4). The meat was extracted for 1 hr. with 0.04 N sulphuric acid in a

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[2] The authors gratefully acknowledge the helpful suggestions of Dr. Jessie E. Richardson, who was Head, Department of Home Economics Research, at the time this study was conducted.

boiling water bath, then digested overnight (16 hr.) with clarase at *p*H 4.6. According to a suggestion of Dr. D. E. Brady (5), the adsorption step was eliminated and an internal standard was used.

Riboflavin. The same extract as for thiamine was used for this determination, and the riboflavin was measured according to the procedure outlined by Peterson, Brady, and Shaw (6).

Analysis of Results. The thiamine and riboflavin values have been expressed in several different ways in the tables. In Series *1* (Tables 1 and 2), the values were calculated on a moisture-free basis only, since the ash and fat were not determined on the roasted and canned beef. During roasting, the moisture content of the beef decreased, and the fat content increased due to the seepage of fat into the lean from adipose tissue surrounding the muscle. Thus, the effect of roasting on the vitamin content of beef was best shown when the values were calculated on a moisture-fat-ash-free basis. The figures for canned meat were also best expressed on the same basis, since salt was added to the meat when it was canned. For these reasons, the vitamin values in Series *2* (Tables 1 and 2) were expressed on a moisture-fat-ash-free basis. In Table 3, the vitamin content is expressed on a moisture-ash-free basis because of the change in moisture and ash content during corning and cooking.

The data were treated statistically according to the method of analysis of variance of Snedecor (7).

RESULTS AND DISCUSSION

In Table 1 is given the summary of the averages of the chemical data on changes brought about by roasting. Both moderate (300°F.) and high (500°F.) temperatures were used in Series *1*, while only one temperature (325°F.) was used in Series *2*.

The apparent effect of feeding grain to range cattle appeared to be an increased fat content of the tissues which became evident some time after the animals had been on the grain ration for sixty days but before ninety days (Table 1). Thiamine and riboflavin values were not affected by variations in the feeds studied. The thiamine values obtained in all the groups were slightly lower than those previously reported by Cover, McLaren, and Pearson (8), and Hinman, Halliday, and Brooks (9). Closer agreement is observed among the riboflavin values presented here and published data on comparable samples obtained by Brady, Peterson, and Shaw (10);

TABLE 1

Effect of roasting on the nutritive value of beef

NUMBER OF ANIMALS	RATION	ROASTING TEMPERATURE	AVERAGE MOISTURE	AVERAGE ASH	AVERAGE FAT	AVERAGE THIAMINE	AVERAGE RIBOFLAVIN	AVERAGE RETENTION	
								Thiamine	Riboflavin
		Series *1**							
		°F.	%	%	%	mcg./gm.	mcg./gm.	%	%
8	Grass	raw	73.9	1.1	1.5	2.8	5.0	—	—
		300	62.5	—	—	1.7	4.7	61	94
		500	60.3	—	—	1.5	4.5	54	90
2	Grass to 60-day grain	raw	73.0	1.1	1.3	2.8	4.5	—	—
		300	61.0	—	—	1.8	4.6	64	102
		500	60.9	—	—	1.3	4.4	46	98
2	Grass to 90-day grain	raw	72.2	1.1	2.9	2.6	4.0	—	—
		300	60.4	—	—	1.4	3.6	54	90
		500	58.3	—	—	1.1	3.6	42	90
3	Grain	raw	70.2	1.1	4.8	2.4	4.1	—	—
		300	57.2	—	—	1.4	3.4	58	83
		500	55.9	—	—	1.2	3.5	50	85
		Series *2*†							
3	Grass	raw	74.9	1.0	2.1	4.7	6.4	—	—
		325	60.8	0.9	7.5	2.5	6.4	53	100
3	Grass to 90-day grain	raw	73.2	1.0	4.0	3.6	4.8	—	—
		325	61.1	0.9	7.2	2.3	4.6	64	96
3	Grass to 180-day grain	raw	70.9	1.1	5.5	4.4	5.8	—	—
		325	57.3	0.9	11.8	2.6	5.8	60	100

* Vitamins reported on a moisture-free basis.

† Vitamins reported on a moisture-ash-fat-free basis.

Cover, McLaren, and Pearson (8); Hinman, Tucker, Jans, and Halliday (11); and Munsell (12). Thiamine retention (54 to 64 per cent) at an oven temperature of 300°F. was consistently higher than that at 500°F. (42 to 54 per cent) while riboflavin retention (83 to 102 per cent at 300°F. and 85 to 98 per cent at 500°F.) was unaffected by changes in temperature. The difference between the retention of the two vitamins studied was probably due to the greater solubility and heat lability of thiamine as compared with riboflavin. These retention values compare well with those of Cover *et al.* (8) in which the vitamin content of the drippings was taken into account.

The effect of canning beef is brought out in Table 2. The precooking period of the meat in an open pan in the oven caused a loss of approximately 10 per cent moisture. The addition of a small amount of salt to the jars of meat before canning accounts for the increase in the ash content. Destruction of thiamine to the extent of 85 per cent was probably due largely to the heat treatment. As far as thiamine retention was concerned, it appeared that metal (24 to 37 per cent retention) was a more satisfactory container than glass (15 per cent retention) and that the more recent recommendation for safe processing (65 min. at 240°F.) which resulted in 35 to 37 per cent retention, was superior to the former (85 min. at 250°F.), which resulted in 24 per cent retention. Beef canned in glass jars and stored four months retained 13 per cent of its thiamine and 173 per cent of its riboflavin. The apparent riboflavin retention is excessively high, 171 per cent when beef was canned in glass and 213 to 280 per cent in metal cans. This phenomenon has been reported by other

TABLE 2

Effect of canning on the nutritive value of grass-fed beef

TYPE OF CONTAINER	CANNING TECHNIQUE				AVERAGE MOISTURE	AVERAGE ASH	AVERAGE FAT	AVERAGE THIAMINE	AVERAGE RIBOFLAVIN	AVERAGE RETENTION	
	Precook (oven)	Process								Thiamine	Riboflavin
		Pack	Time	Temperature							
	min.		*min.*	*°F.*	%	%	%	*mcg./gm.*	*mcg./gm.*	%	%
Series 1*											
—	—	raw	—	—	74.0	1.1	2.9	5.2	8.4	—	—
Glass	30	hot	85	250	65.2	1.9	3.1	0.8	14.4	15	171†
Glass	30	hot	85	250	66.0	2.2	3.0	0.7	14.5	13	173‡
Series 2¶											
—	—	raw	—	—	73.9	—	—	4.6	5.4	—	—
Metal	30	hot	85	250	78.7	—	—	1.1	15.0	24	278
Metal	50	hot	65	240	80.7	—	—	1.7	15.1	37	280
Metal	—	cold ⁂	65	240	80.6	—	—	1.6	11.5	35	213

* Vitamins reported on a moisture-ash-fat-free basis.
† Analyzed immediately.
‡ Analyzed after four months' storage.
¶ Vitamins reported on a moisture-free basis.
⁂ 50-min. exhaust period.

TABLE 3

Effect of corning on the nutritive value of beef

NUMBER OF ANIMALS	RATION	CONDITION OF MEAT			AVERAGE MOISTURE	AVERAGE ASH	AVERAGE THIAMINE*	AVERAGE RIBOFLAVIN*	AVERAGE RETENTION	
		Raw	Corned	Cooked					Thiamine	Riboflavin
					%	%	*mcg./gm.*	*mcg./gm.*	%	%
2	Grass to 60-day grain	X			74.0	1.2	2.5	5.8	—	—
		X	X		67.5	11.5	0.5	5.2	20	90
			X	X	54.9	6.7	0.2	2.6	8	45
2	Grass to 90-day grain	X			75.0	1.1	3.5	5.1	—	—
		X	X		65.0	11.1	1.5	5.8	43	114
			X	X	57.9	6.3	0.6	3.7	17	73
4	Grain	X			72.3	1.1	2.9	5.6	—	—
		X	X		65.3	10.3	1.5	5.6	52	100
			X	X	54.6	7.4	0.6	3.2	21	57

* On a moisture-ash-free basis.

workers in meat studies: Hinman, Tucker, Jans, and Halliday (11); Jackson, Crook, Malone, and Drake (13); Watts, Peng, and Esselbaugh (14); and Rice and Robinson (15). Using microbiologic methods, Rice and Robinson (15) attributed the high values of the cooked product to the presence of a substance stimulatory to the test organism. Hinman *et al.* (11) found similar discrepancies using the chemical method. Unless this stimulatory substance is riboflavin, it seems unlikely that it would affect the two entirely different methods in the same manner. Lewis and Gorham (16), using a fluorometric method to determine riboflavin in which antimony trichloride in ethanol was employed to remove interfering substances, obtained values that were comparable to those reported by workers using microbiologic methods. It seems, then, that this additional step is not capable of reducing the riboflavin values and the retention because the microbiologic method still gave excessively high values as reported by Hinman *et al.* (11).

Data obtained on the corning of beef are presented in Table 3. There was a progressive loss of moisture from the raw to the cooked product. The ash content increased upon corning but, due to leaching, then decreased during cooking. Fifty per cent or more of the thiamine was lost during the corning process. When the corned beef was cooked, the total destruction of thiamine caused by the two processes was 79 to 92 per cent. Again, riboflavin was conserved to a greater degree in both processes, 90 to 114 per cent being retained after corning and 45 to 73 per cent after cooking in addition to corning. The deleterious effect of corning on thiamine could be due to leaching and to ingredients of the brine. Greenwood, Beadle, and Kraybill (17) found losses varying from 0 to 100 per cent when thiamine was subjected to the various components of the brine. The values obtained for riboflavin in the corned product agreed well with those of Booth and Barton-Wright (18).

SUMMARY

The effect of roasting, canning, and corning on the thiamine and riboflavin content of beef from cattle fed grass or grain for different intervals of time was determined. The apparent effect of feeding grain to range cattle appeared to be an increased fat content of the tissues which became evident sometime after sixty days. Thiamine and riboflavin values were not affected by variations in the feeds studied.

During roasting, the retention of thiamine (42 to 64 per cent) was significantly lower than that of riboflavin (83 to 102 per cent).

Thiamine retention during canning was slightly higher in metal cans (24 to 37 per cent) than glass jars (15 per cent), but in both cases the losses were great. Riboflavin, on the other hand, appeared to increase significantly during this process when measured by the fluorometric method (171 per cent in glass, 213 to 280 per cent in metal cans). Storage seemed to cause no further changes in the values of either of the vitamins.

The retention of thiamine was 20 to 52 per cent after corning, and riboflavin retention was 90 to 114 per cent. Only 8 to 21 per cent of the thiamine and 45 to 73 per cent of the riboflavin were retained when the meat was cooked in addition to corning.

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Editorial

FAIRFAX PROUDFIT RECEIVES 1949 MARJORIE HULSIZER COPHER MEMORIAL AWARD

Fairfax Proudfit was honored at the annual banquet at the 32nd Annual Meeting of the American Dietetic Association in Denver on October 14, when Helen E. Walsh, President of the Association, presented her with the fifth Marjorie Hulsizer Copher Award.

This Award, established in 1944, was made possible when an anonymous gift of $5000 was made to Barnes Hospital, St. Louis, in order to perpetuate the name of Mrs. Copher in dietetics. An additional sum has since been added to the original amount, and the interest from the fund each year goes to the person selected for outstanding work in dietetics by the Executive Board of the American Dietetic Association with the advice of the Director of Barnes Hospital.

Previous awards have gone to Ruby Motley Armbrust, then First Lieutenant in the Medical Department of the Army; Mary Pascoe Huddleson, former Editor of this JOURNAL; Lulu Graves, first President of the American Dietetic Association; and Grace Bulman, Chief, Dietetic Division, Department of Medicine and Surgery, Veterans Administration.

In making this year's presentation to Miss Proudfit, Miss Walsh said:

"Established in 1944, the Marjorie Hulsizer Copher Award serves a dual purpose. It reminds us of Mrs. Copher's great contribution to the early years of the dietetic profession, and makes it possible to give recognition to one of our members for exceptional accomplishments in the field of dietetics.

"Selection is made by our Executive Board and the trustees of Barnes Hospital, St. Louis, through whom the fund was established. Fairfax Proudfit, well known and beloved by many of you, has been chosen to receive the award this year. Miss Proudfit's professional activities are many—hospital dietitian, teacher, and author. To list these varied fields, in each of which she has been an outstanding success and leader, is to give but a cold picture of a woman known for her warm and generous spirit.

"Miss Proudfit has been a successful administrator as head of the John Gaston Hospital, Memphis, for over thirty years. She has seen the department grow from small beginnings to a well organized integral part of the hospital and her own position change from the vaguely defined work of the dietitian in charge of something called special diets to that of well recognized department head, a member of the hospital administration cabinet. As a teacher, she taught and inspired hundreds—even thousands—of student nurses and medical students. Impatient with the type of teaching material available, this little woman, with no spare time but limitless energy and talent, sat down and wrote her own text book, *Nutrition and Diet Therapy*, which has been used by generations of students and has gone through eight successful editions.

"Such is the outline of Miss Proudfit's professional attainments. But this is only the skeleton of her contributions to our profession. Busy as these three fields kept her, she still had time to give warm encouragement to young dietitians. A pioneer herself, she made the road easier for those following in the path she had cleared. The example of her work at the John Gaston Hospital persuaded many other hospitals to employ dietitians, and it was to Miss Proudfit that these young dietitians went for help and advice. Thus her influence has been the greatest single factor in the recognition of dietetics as a profession in the southern states. No one can measure what wide spread effect her teaching and writing have had on raising the level of nutrition in the whole community.

"Miss Proudfit's generous warm personality has made her many friends by whom she is dearly loved. A daughter of the South and proudly loyal to its traditions, she is known to her friends as 'Dixie.'

"Miss Proudfit has been a member of the American Dietetic Association since 1918. She has the almost unique distinction of being *invited* to join the Association. At the meeting in 1917, Lulu Graves asked the assembled group, 'Where is Miss Proudfit?' Learning that she was not present, Miss Graves said, 'We shall certainly have to have *her* for a member.' Miss Graves' judgment was correct, as Miss Proudfit's contributions to the local, state, and the national associations prove. Miss Proudfit has served willingly and well on many committees and has contributed frequently to the JOURNAL. She was the inspiration for the organization of the Mississippi Dietetic Association.

"The honor that we are proud to confer on Miss Proudfit tonight is not the first well earned recogni-

At the banquet of the American Dietetic Association held in Denver, Pearl Jackson holds the portfolio which Dr. Clara Mae Taylor presented to her as the first Mary Swartz Rose Fellow. On the right, Fairfax Proudfit, recipient of the fifth Marjorie Hulsizer Copher Award, is seen with the framed scroll which explains her signal recognition.

tion that has come to her. In 1943, the Memphis Dietetic Association, the Gaston Hospital Board, and students whom she had taught in more than a quarter of a century, assembled for a tea at the Gaston Hospital to honor Miss Proudfit on the twenty-fifth anniversary of the publication of her book, *Nutrition and Diet Therapy*. In 1947, the Memphis Dietetic Association planted a dogwood tree in Memphis to honor Miss Proudfit for her pioneer work and continued interest in dietetics. The planting of this tree with its permanent marker bearing Miss Proudfit's name is an honor reserved by the City Beautiful Commission of Memphis for those citizens who have made outstanding contributions to the community. Thus the tree represents recognition not only by her own professional associates, but by the leaders of the community as well.

"It is now our privilege to add to the laurels this great woman has already received. The Marjorie Hulsizer Copher Award is presented to her 'in recognition of her pioneer work in diet therapy; her contribution to the appreciation and understanding of dietetics gained by hundreds of nurses and physicians whom she has taught; her skill in interpreting nutrition and its application to dietetics as shown by her textbook which has been used continuously and revised since 1918; her never failing interest in the patient; and her many and varied contributions to the Association and its members.' "

PRESENTATION OF FIRST MARY SWARTZ ROSE FELLOWSHIP TO PEARL JACKSON

Dr. Clara Mae Taylor, Professor of Nutrition, Teachers College, Columbia University, made the first presentation of the Mary Swartz Rose Fellowship to Pearl Jackson at the annual banquet of the American Dietetic Association in Denver, on October 15. As announced in the January, 1949, issue of the JOURNAL, the Fellowship, for which the Nutrition Foundation, Inc., last year made a grant to the

American Dietetic Association to symbolize the ideals of dietitians, is to be awarded annually for graduate study and research in nutrition or allied fields. Miss Jackson, as the first recipient of the Mary Swartz Rose Fellowship, is pursuing work toward a doctor's degree of at Iowa State College, Ames, as reported in the October issue of the JOURNAL.

In making the presentation to Miss Jackson, Dr. Taylor said:

"I appreciate greatly the honor of being chosen to present, for the first time, the fellowship named in honor of Mary Swartz Rose, a distinguished pioneer and leader in nutrition research and education. It was at the suggestion of the Nutrition Foundation that the fellowship was named for Mrs. Rose. In so doing, it was thought that the greatness of her contributions to the advancement of the science of nutrition might serve to inspire the recipients of this fellowship.

"That this fellowship is being awarded for the first time this evening, eight years after her untimely death in 1941, to perpetuate her ideals of professional achievement is evidence of the far-reaching effect of her vision as a leader and the continuing value of her many accomplishments.

"In October, 1940, the American Dietetic Association conferred on Mrs. Rose an honorary membership in appreciation of her distinguished contributions to nutrition. To date, this is the only special honorary membership which the Association has conferred, and it was the last great honor bestowed on Mrs. Rose during her life time.

"On October 31, 1939, her sixty-fifth birthday, she was given the Award of Distinction by the Associated Grocery Manufacturers of America. In making the presentation of this award, Dr. Henry C. Sherman referred to Mrs. Rose as 'the strongest living link between the laboratory and the consumer of food.'

"In 1937, she became the fifth president of the American Institute of Nutrition, the first, and to date, only woman to hold that office in this distinguished society.

"On October 19, 1936, Professor Rose's portrait by Ivan Olinsky was presented to Teachers College by her former students to commemorate her twenty-five years of service to the college. It was said of her at that time 'that because of her, millions of children received a better start in life, and millions of boys and girls grew into stronger and healthier adulthood.' This portrait now hangs under the clock in the classroom-laboratory which was the first of its kind to be set up primarily for the training of students in nutrition. The portrait is a fine likeness of Mrs. Rose, the artist having caught her vivacious spirit and the sparkle of her personality. Perhaps it is the Yale gown which makes her appear a larger woman than she was. Actually she was petite in appearance, very feminine, and altogether charming.

"In 1935, she was invited to serve as one of three scientists, and the only woman, to represent the United States on the 'Mixed Committee' of the League of Nations, this committee representing agriculture, economics, and public health. A special nutrition commission was also appointed by the League to formulate a working physiologic basis as a starting point for the deliberations of the 'Mixed Committee.' Under the guidance of Mrs. Rose, the first international dietary schedule for the pregnant and nursing woman was established.

"Later in 1935, at the celebration of the Business Women's Week in New York City, Mrs. Rose was named as one of the twenty-five American women to achieve international recognition in their professions.

"Following her death in 1941, the Greater New York Dietetic Association established the Mary Swartz Rose Memorial Lecture, and each year a distinguished scientist has been selected to give this lecture in her honor at the Academy of Medicine in New York City.

"The presentation of the fellowship this evening marks an anniversary of great significance. Just forty years ago, in 1909, Teachers College, Columbia University, organized the first college department of nutrition under the leadership of Mrs. Rose—then Mary Swartz—a brilliant young woman, abounding in energy, imagination, and initiative, who had just received her doctor's degree at Yale University under Dr. Lafayette B. Mendel. Starting as an Instructor, one year later she was made Assistant Professor of Household Arts and in the same year became Mrs. Anton R. Rose. In 1918, she became Associate Professor of Household Arts, and in 1921, she was promoted to a full professorship with the title of Professor of Nutrition. This was the first nutrition professorship established in any American university.

"Those of you who share with me the experience of having studied under so great a teacher as Mrs. Rose can well understand my deep appreciation of the rare privilege which I had of serving as one of her staff members for fifteen years.

"No one in this Association needs to be reminded of her outstanding textbooks (*The Foundations of Nutrition*, *Laboratory Handbook for Dietetics*, *Feeding the Family*, and *Teaching Nutrition to Boys and Girls*) and her many contributions to scientific journals which have advanced our knowledge of every type of food. Her versatility in writing is evidenced by such diverse titles as, on the one hand, 'The Baby's Automobile Kit,' and, on the other, 'Factors Influencing Hemoglobin Regeneration.'

"I would like to close with the words of Dr. Grace MacLeod, now Professor Emeritus of Nutrition and an associate of Mrs. Rose on the staff at Teachers College for twenty-one years. I quote this statement expressing her sentiments, 'To us Mrs. Rose has passed on a torch, the light of which will ever illumine her name and our pathway."

Nominations for the Mary Swartz Rose Fellowship for 1950 may now be made. The closing date for nominations will be February 1, 1950, by which time all supporting recommendations should be in the hands of the Awards, Scholarship, and Loan Fund Board of the American Dietetic Association. The award will be made and the candidate notified of the selection not later than March 15, 1950, and unsuccessful candidates will be notified at the same time.

Provisions of the Mary Swartz Rose Fellowship are as follows:

Applicants for the fellowship must (a) be members of the American Dietetic Association, (b) have ranked in the upper quartile of their respective graduating classes, and have majored as under-graduates in a field closely related to that in which the fellowship is sought or have gained equivalent training later, and (d) show promise of making a valuable contribution to the profession.

The recipient of the fellowship will be selected from the candidates by the Awards, Scholarship, and Loan Fund Board of the American Dietetic Association, which is appointed by the Association's President, subject to the approval of the Executive Board. This Board shall consist of six members, two appointed each year for a term of three years. The President and President-Elect of the Association are ex-officio members of this Board.

A.D.A. LOANS FOR GRADUATE STUDY

In an effort to encourage graduate study in the field of nutrition and dietetics by younger members of the American Dietetic Association, a Loan Fund for Graduate Study was established in 1946. It is increasingly apparent that the profession needs more members qualified to accept responsible positions of leadership for which advanced degrees are requisite. Although some approved internships now offer graduate credit, few provide an opportunity to complete the work for the master's degree unless additional time is spent in study.

This Loan Fund for Graduate Study was originated by gifts from members and friends of the Association during the past five years. Additions are currently being made by state, territorial, and local dietetic associations, by memorial gifts, bequests, and interest on special funds held by the Association. The opinions expressed by several members that such funds be used for fellowship purposes have been given careful consideration by the committee and the Executive Board. In view of the limited nature of the fund, it has been decided that for the present, at least, loans rather than outright gifts can benefit more people.

Funds will be administered by the Executive Board of the Association upon recommendation of the Finance Committee of the Board. The Awards, Scholarship, and Loan Fund Board of the Association will review applications and select recipients. The policies pertaining to the granting and administering of the Loan Fund for Graduate Study are subject to change as more funds become available. Present policies are as follows:

1. ELIGIBILITY OF APPLICANTS:

Any person who has been an active member of the American Dietetic Association for at least two years and wishes to pursue graduate study leading to an advanced degree may make application for a loan. No more than three applicants from any one state or territory can be considered.

2. HOW AND WHEN TO APPLY:

Applications for loans should be made on special forms which may be procured from the A.D.A. office in Chicago, or from the state dietetic association secretary. Application must be accompanied by full credentials, including transcript of college credits, a photograph, and a personal letter stating plans for graduate work, time and place contemplated, degree sought, and future plans. Application must be endorsed by a state officer or House of Delegates representative of the state association, and by one other member of the Association familiar with the applicant's work in a professional capacity. Applications must be in the Chicago office before March 1, 1950. Notification of loans granted will reach recipents before May 1, 1950.

3. AMOUNT OF LOANS, INTEREST REPAYMENT, AND SECURITY:

Loans of any amount up to $1000 may be made to qualified applicants, the total loans or installments to be adjusted according to circumstances. The total amount loaned in any one year shall be determined by the total funds available and so proportioned as to provide for equivalent loans in subsequent years.

Interest on loans shall be charged at the rate of 2 per cent annually, beginning one year from the date of the loan. Repayment of the principal should be made as soon as possible in order to allow other members of the Association to benefit from the loan privilege. It is expected that all loans will be repaid within three years from the date of the loan.

Security for these loans may be provided by promissory note. The terms of loans made may not be uniform but may vary according to the facts in particular cases as the administering authorities may deem advisable.

4. SELECTION OF LOAN RECIPIENTS:

Final selection of recipients from among applicants will be made according to qualifications and need as judged by members of the Awards, Scholarship, and Loan Fund Board. The names of applicants and recipients of loans may be kept confidential if so requested.

Current Comment

ACHIEVING QUALITY FOOD PRODUCTION IN TODAY'S KITCHEN[1]

MARGARET L. MITCHELL

Vice-President, The Stouffer Corporation, Cleveland

Today's kitchen is a scientifically planned production unit—an efficient workshop with good equipment, adequate refrigeration, a well designed equipment layout, from which food production can be carried on without waste motion, and modern methods of sanitation can be practiced. It is a kitchen well lighted and well ventilated to give the best possible working conditions.

A well planned kitchen is *one* step in the direction of quality food production, but management of such a kitchen is the second step. The best planned kitchen in the world will not show efficient operation or serve quality food unless management makes it so.

We, as dietitians, have a deep responsibility in the service of quality food—food that is nutritious and healthful, carefully prepared, delicately seasoned for flavor, and attractively served. Sound nutrition is all-important, but we must agree that food, however good in health-giving qualities, is of no benefit unless it is eaten. For this reason we must not only consider nutritional value, but we must give serious attention to the details in quality food production, and to that "extra" appeal in its taste that results in genuine enjoyment when it is eaten. Yes, "the proof of the pudding is in the eating."

In recent years the American housewife has expanded her knowledge of food and nutrition. She is not only a pretty good cook, but her repertoire of menu items has increased; she has a fairly good understanding of nutrition; she knows about the balance of foods for healthful eating; and she has a keen appreciation of quality food attractively served. In short, she has profited by the splendid work carried on through the many educational programs directed by home economists throughout the country. The home economists in extension work, the home economics journalists for newspapers and magazines, and the home economists for the various foods manufacturing companies can rightly be proud of the progress they have made in teaching American homemakers new ideas about food. The housewife, as a result, has established new standards in food, and we, in institutional foods work, must compete with these standards and keep on a level with them or above them, if possible.

It was thought at one time that institutional kitchens could not produce food that had a homelike touch, because big kitchens had to produce food in large quantities and it had to be mixed in large machines and prepared hours in advance of service. This idea, fortunately, has long since been proved a fallacy. Such a negative thought should be dispelled from the mind of every dietitian, because it serves only as an excuse for inefficiencies in the management of a kitchen and the production of good quality food. The institutional kitchen today is able to produce good quality food which compares favorably with that served in the home.

Actually, there is no magic formula by which we can suddenly produce quality food in our institutional kitchens. Wouldn't it be wonderful if such were the case? But the road to success is never quite that short or quite that easy to travel. Quality food production is attained only through hard work, continuous efforts, and enthusiastic interest on the part of the dietitian in charge. It is a never-ending job—always striving to reach a goal of perfection.

Cooking today is a combination of science and art—a science in that we have a knowledge of food chemistry and have definite standards to work by, an art in that we still must depend on the human skills to follow these standards.

Supervising to achieve quality food means teaching your staff and your employees to have a keen appreciation for good food, training them in the methods by which it can be attained, constantly challenging their interest and ability to reach out for higher standards, and judging results with them by tasting their products. You, as director, must be a real inspirational leader if such is to be accomplished.

In my mind, two main qualifications, besides the formal education, are necessary for this kind of work:

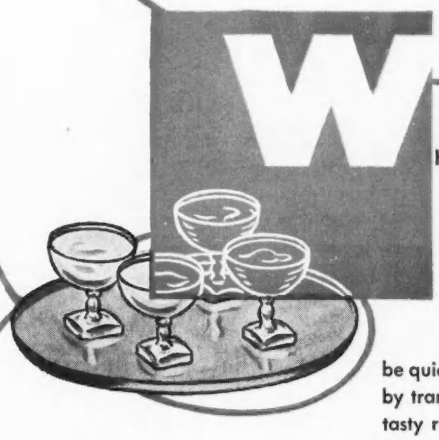
(a) A scientific knowledge and appreciation for top quality food.

(b) The ability to work with and lead people.

With these two qualifications you can mold a department in any direction you choose.

[1] Presented before the Michigan Dietetic Association on November 5, 1948, in Battle Creek.

GIVING MILK THE GREEN LIGHT!

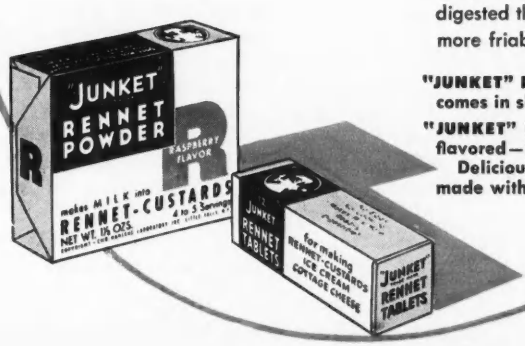


WHEN MILK IS A VITAL PART of the daily regimen, such as in infancy, childhood, pregnancy, and for gastro-intestinal, postoperative and geriatric conditions—a serious aggravation of the dietary problem may occur for those patients who (either for physiologic or psychologic reasons) are unable to ingest this essential nutrient.

In such cases, the *red light* of milk refusal may be quickly changed to the *green light* of eager acceptance—by transforming the liquid milk into deliciously flavored, tasty rennet desserts, through the medium of rennet powder or household rennet tablets.

Young and old alike relish these temptingly smooth custard-like desserts which incorporate the uncooked milk — with all nutritional factors unchanged — into a variety of delicious, colorful rennet desserts. They're so simple to prepare—and are more easily digested than milk itself, because of the softer, more friable curds formed in the stomach.

"JUNKET" is the trade-mark of Chr. Hansen's Laboratory, Inc., for its rennet and other food products, and is registered in the United States and Canada.



"JUNKET" RENNET POWDER — already sweetened — comes in six popular flavors;

"JUNKET" RENNET TABLETS are not sweetened or flavored—just add sugar and flavor to taste.

Delicious, highly acceptable rennet desserts may be made with either.

"JUNKET" BRAND FOODS
DIVISION
Chr. Hansen's Laboratory, Inc.
LITTLE FALLS, N. Y.
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Accepting this fact, then, let us delve into the subject of quality food production and see what factors are important in this task of achieving quality food service.

STANDARD PURCHASING SPECIFICATIONS

Top quality food cannot be produced without top quality raw materials. Therefore, the production of quality food must start with the selection of raw materials.

So that you will be able to check regularly the quality of foods purchased, you should have a set of purchasing specifications made for your own needs. This would be the standard for use both in ordering the food and receiving it.

In our company we use the following system, and find it very satisfactory: We go over the specifications very carefully with our dealer and ask his opinion on whether or not he can fulfill the requirements; then we expect his cooperation in living up to the established standards. We make every effort to give full cooperation to our dealers, too, and once an agreement to do business with a concern has been made, we do not switch dealers without a lot of consideration and "just" cause.

High grade raw materials are generally more economical than the lower grades. Thus, in selecting merchandise I would recommend that you set your standards on strict specifications for top quality. Test merchandise, using the blind test comparative method, so that no biased opinions will enter into the judgment for quality. Establish yourself with reliable companies, and then work cooperatively with their representatives to maintain high standards in the merchandise you buy.

STANDARDIZED RECIPES

The point from which quality food production in your kitchen begins is the standard recipe file. We have outlived the days when cooks were depended upon to provide recipes. Certainly, there are still many cooks capable of doing this and who like to do it, but all such recipes should be made subject to the approval of the dietitian in charge and should be standardized and recorded by her for continued use in the kitchen. Then, too, a dietitian should not allow herself to be dependent upon cooks for recipes, because control of production is taken out of her hands, and consistently good food does not result from this type of operation.

A standard recipe file should exist in every institutional kitchen; it is here that control of costs, as well as control of quality begins. Such a recipe file reflects the food standards of the dietitian in charge.

It is not difficult to establish a standard recipe file, but it does require work, extra time, and patience. A complete recipe file is not built in a short time; such a task requires careful study and is the result of months and sometimes years of work. The dietitian must work with her cooks and actually make the various dishes, check them critically from every angle, and test them for full flavor and attractiveness. She should check the responses in the dining rooms also to learn the guests' reactions. The dietitian should be her own best critic of the food produced, establish high standards, and put these standards into her recipes.

If today you are starting out to establish a standard recipe file for your kitchen, it might be worth your while to check some of the quantity recipe files that are available through some of the college home economics departments. Such files are well-checked and should be a very good basis on which to build your own file.

Even though the task of making a standard recipe file might seem like a long-term project, it is a requisite in the operation of today's institutional kitchen. You can have no controls on quality or costs without one. Steady progress can be made on the project every day, and each standard recipe completed is a contribution to quality food service.

STANDARD PORTIONS

Standard portions should be established in conjunction with the standard recipes and judged at the same time as the recipe is tested, so that complete information can be recorded on the same recipe card.

CONTROLLED COOKING METHODS

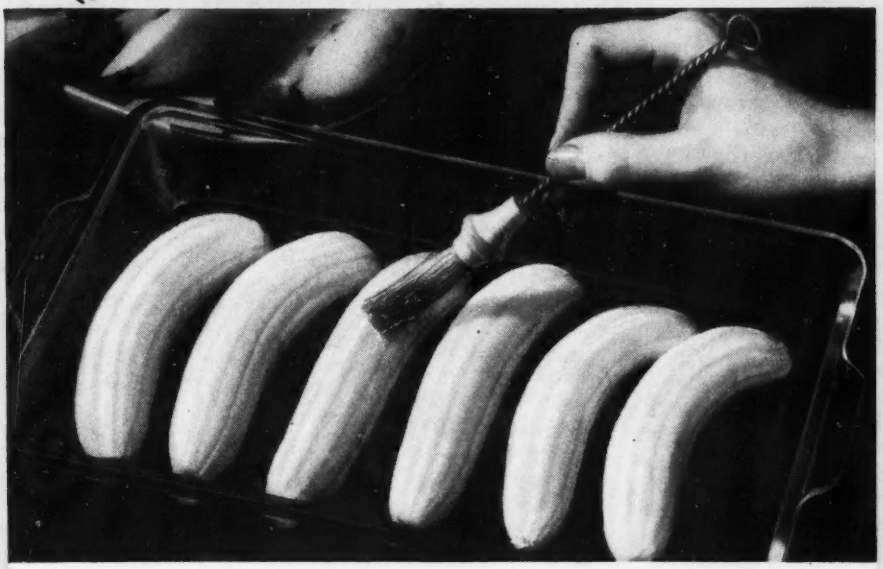
Standard purchase specifications, recipes, and service are important steps in the direction of quality food production, but they do not insure results without controlled cooking methods and good supervision. These controls of cooking methods rest with you, the supervisor.

You will agree with me, I know, when I say that properly cooked food, when served right from the skillet, or fresh from the oven, is truly delicious. Such food is attractive in appearance, it has an appetizing aroma, and it is full of flavor. A pan-fried fish is delicious when it comes golden brown right out of the skillet to your plate. What can have a more stimulating aroma than a roast, stuffed turkey, just when it is being lifted from the oven? How delicious fresh apple pie tastes when it has just a little of the oven heat in it still!

These are the qualities in food we must strive to capture in our institutional kitchens. By contrast, is there anything interesting about fried fish that has stood on a steamtable for an hour or so? No, of course not! Nor is any food good when it is cooked a long time in advance of service and held in a heating cabinet or steamtable. Controlled cooking means bringing the cooking time and serving time as close together as possible, and it means cooking in unit quantities all during the meal period. Green vegetables, for example, deteriorate in flavor, color, and nutritive value when cooked in advance and held,

CHIQUITA BANANA SAYS:

You can do a lot with BAKED BANANAS



Serve as a Vegetable-Baked Bananas

A Quick Dessert-Baked Bananas

How to make BAKED BANANAS

Amount for 1 portion: 1 whole or 2 half bananas	20 portions	100 portions	.....portions
INGREDIENTS	AMOUNTS OR WEIGHTS	AMOUNTS OR WEIGHTS	AMT. OR WT.
Firm bananas*	20	100	
Melted butter	⅓ cup (4 ounces)	2⅔ cups (1 pound 4 ounces)	
Salt	as desired	as desired	

Use all-yellow or slightly green-tipped bananas

Peel bananas. Place into well-buttered baking pans. Brush well with butter and sprinkle with salt. Bake in a moderate oven (375°F.) 15 to 18 minutes, or until bananas are tender . . . easily pierced with a fork. If desired, bake until almost done; then place under broiler heat until tender and browned. Serve very hot as a vegetable, or as a dessert with cream or a hot fruit sauce.

VARIATIONS

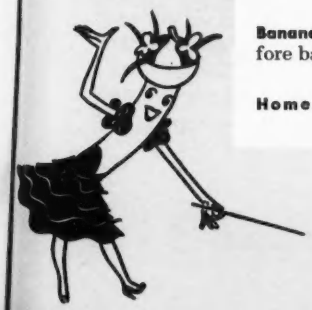
Bananas baked with sugar *(glazed)*: Just before baking, sprinkle bananas lightly with white or brown sugar. Sprinkle with cinnamon if desired. Bake as above. Serve hot as an entrée with beef, ham, chicken or turkey.

Bananas baked with cranberries: Just before baking, pour hot cranberry sauce over bananas, allowing 1 cup of sauce for every 6 bananas. Bake as above. Serve hot with beef, chicken or turkey.

Bananas baked with jelly or jam: Just before baking, spread bananas with tart jelly or jam, allowing 1 to 2 tablespoons jelly or jam for each banana. Bake as above. Serve hot as a sweet entrée or as a dessert.

Home Economics Dept., UNITED FRUIT CO., Pier 3, N. R. — New York, N. Y.

So different-So delicious-Baked Bananas



MEMO: For bland diets, fruit diets, high carbohydrate diets - BANANAS!

and it is essential that they be cooked in small quantities just before the serving period.

Controlled cooking and timely schedules for baking are essential factors in the service of quality food. Freshly cooked vegetables, meat, or fish; oven-fresh baked products; and fresh, crisp salads are a joy to eat and lend that homelike touch to any meal. It is well worth the dietitian's time and effort to see that such food is produced.

TASTING FOOD

An essential part of supervisory work is tasting the food prepared. Remember, the real test is how the food tastes. Is it seasoned just right, or does it taste flat and uninteresting? Does it have a full "natural" flavor, or has it an "off-flavor" of burned fat, or an ice box taste, or perhaps a rancid taste, or perhaps it is over-seasoned with spices? Does the product have the right consistency for enjoyment in eating, or is it sticky, or pasty, or thin and uninteresting?

You be your own best critic of food by tasting it regularly every meal. Teach your cooks to taste with you, so they will learn to be discriminating in tastes and become familiar with the standards of quality you expect.

Quality food production is the direct result of good supervision, and good supervision in the food business means attention to details. To produce top quality food then, the dietitian must be on the alert to check constantly on details. She must plan the ordering of food so that fresh foods will be available for daily use. She must order foods only in amounts needed for the menu, rather than buying quantities of food, then attempting to plan menus from the merchandise on hand. Foods purchased in amounts for menu needs only will help to avoid leftovers, and this is conducive to both quality and waste control. She must arrange production schedules so that food is prepared and cooked as close to the serving time as possible. She must judge food by tasting it.

WASTE CONTROL

We cannot discuss operations of a kitchen without some reference to waste control. The kitchen may be well organized, carefully supervised for quality food production, and offer good working conditions to employees, but unless it has a controlled food cost and its accounts stay in the black, it cannot be considered a successful unit. The dietitian is not expected to set up an elaborate cost accounting system (that requires the service of a trained accountant), but she is expected to set up the controls on food that will produce the right results within her department. It is the dietitian's responsibility as a department head to buy, produce, and serve food with a minimum amount of waste and to keep accurate track of all foods purchased. This can only be done by constant checking and careful supervision.

There are a few simple points which will assist you in controlling costs and waste:

(a) Estimate the meal requirements and plan the purchasing accordingly; don't overbuy.

(b) Prepare food economically with no unnecessary waste in the cleaning of fruits and vegetables or the trimming of meats or fish. Take yield checks on unit quantities of foods periodically to see what yields actually are. Thus you know actual costs in your own department.

(c) Produce food economically. Have no unnecessary waste through the burning of food, excess shrinkage in meat cookery, failures in baked products, or overproduction. Here again, make frequent checks on meat shrinkages to be sure no waste through excess loss in cooking exists.

(d) Use standardized recipes and standard portions.

(e) Keep leftover foods to a minimum, but use what you have wisely.

When waste is eliminated, your food cost is under control. Waste is not hard to find if you are on the alert for it. The dietitian has the controls in her own hands when she uses standard purchasing specifications, recipes, and services. She keeps these controls tightened through her educational program and her constant supervision.

EDUCATIONAL PROGRAM

The work of food production from today's kitchen *is* detailed. It is not a "one-man" job, and success depends to a large extent on how well you, as the dietitian, can work with and direct employees. All the detailed handling of food must be done by the skilled hands of loyal and well-trained cooks who willingly follow your leadership, believe in your standards, and carry out their duties with the interest of their employer at heart. Faithful, hard-working employees are the backbone of any kitchen, and without them no dietitian can be successful, no matter how great her knowledge of food and nutrition may be. Good employees don't just happen; they are made by good management.

Today's method of developing employees is through an educational program planned by the dietitian for the needs of her own department. Such a program consists of three parts;

(a) Induction training.

(b) Small group discussion classes.

(c) On-the-job training.

The whole program should be directed by the chief dietitian. This educational program is a subject in itself, and I won't attempt to discuss it now, except to say that it is a necessary part of supervision today. Such an educational program accomplishes these purposes:

(a) It gives the employee an opportunity to know the background and history of the company for

Pattern for Proper Eating Pays Off!

Health of 64 Families Improves Greatly During Year-Long Nutrition Study

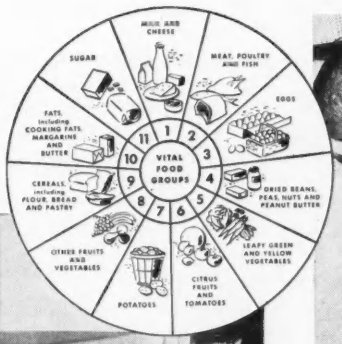
By correcting faulty eating habits, participants in a family nutrition study, recently conducted by the Westinghouse Electric Corporation and a well-known eastern university, measurably improved their average health status. The scientific methods of selecting, preparing and storing foods, which trained investigators taught housewives, played an important part in increasing vitamin and mineral retention in foods.

24 out of 64 Above-Average Families Showed Excessive Losses

At the start, using Vitamin C as an indicator of perishable vitamins, examinations revealed that even though individuals were consuming adequate amounts, their blood-level tests failed to measure up. Most of the families were under par, and in 24 cases, vitamin losses bordered on the danger line. This led examiners to suspect that wasteful cooking habits were to blame.

Laboratory and Home-Cooked Samples Were Compared

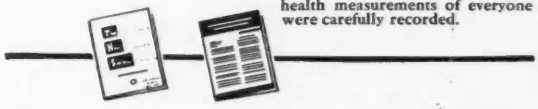
As a result, thorough laboratory tests were made, comparing samples of vegetables cooked by families in their own homes with laboratory cooked and raw samples. For complete accuracy, all vegetables used by both groups were taken from identical lots which had been pretested for vitamin content. These tests proved vitamin waste through cooking. Housewives were then taught to correct their old-fashioned habits and to follow scientific methods which were known to preserve vitamin content.



Homemakers were urged to use the Vital 11 Food chart as a guide for planning daily essential food requirements.

Housewives were instructed to prepare fruits and vegetables just before using, thus protecting food values . . . retaining nutrients.

Importance of well-balanced breakfasts in supplying energy and a good portion of the nutrients needed daily was stressed.



Throughout the study, weight and health measurements of everyone were carefully recorded.

Full Report Available for School Use. A 36-page handbook, "They Never Suspected", contains facts of study; provides program for teaching better nutrition to students and their families. Teacher's copy free; additional copies, 10c each. Sufficient supporting students' Fact Folders available for classroom use at no cost. Enclose money with order. Send to Consumer Service Department, Westinghouse Electric Corp., 208 E. 4th St., Mansfield, O.

Every School House Needs Westinghouse

which she works, and thus to develop more interest in her company and pride in her job.

(b) It provides an opportunity for development of a close relationship between employees and the dietitian, and thus paves the way for exacting supervision.

(c) It provides an opportunity for a close relationship among employees, and thus encourages a friendly, cooperative spirit in the department.

(d) It raises the level of efficiency, because employees are given the necessary information about their jobs in an interesting way.

SUMMARY

To summarize this discussion on "achieving quality food in today's kitchen," we say:

(a) There is no magic formula for quality food production. It is attained only by hard work, continuous efforts, and attention to details in the handling of food. Every dietitian should be her own best critic of the foods produced in her kitchen. She must taste food *every* meal and judge it critically with her staff.

(b) Good management achieves quality food production through the use of: standard purchasing specifications, standardized recipes and services, and exacting supervision.

(c) Good management entails an understanding of cost controls and knowledge that such controls begin with the elimination of waste in the handling of food.

(d) Good management of food production includes the use of a three-pronged, planned educational program which inducts the new employee into the company, teaches standards and raises efficiency of workers, and builds good human relations.

The job of food production management is not an easy one but it will always be a challenge to the home economist and dietitian who enjoys working with quality food, finds satisfaction in developing employees, and is interested in the operation of an efficient kitchen.

A.D.A. Program to Be Given at A.A.A.S. Meeting

On December 27, the American Dietetic Association will sponsor a Dietetic Section program at the annual meeting of the American Association for the Advancement of Science to be held in New York City. The program will be given in the Governor Room, Governor Clinton Hotel, beginning at 8:00 p.m. Dr. Clara Mae Taylor, Teachers College, Columbia University, has served as chairman of the committee which planned this program and will preside. The papers to be presented are as follows:

"The Nutrition History in Studies of Growth and Development" by Bertha S. Burke, Assistant Professor of Maternal and Child Nutrition, Harvard University School of Public Health, Boston

"Recent Trends in Family Food Consumption" by Dr. Hazel K. Stiebeling, Chief, Bureau of Human Nutrition and Home Economics, U. S. Department of Agriculture, Washington

"Recent Developments in the Science of Nutrition" by Dr. Charles Glen King, Scientific Director, The Nutrition Foundation, Inc., New York City.

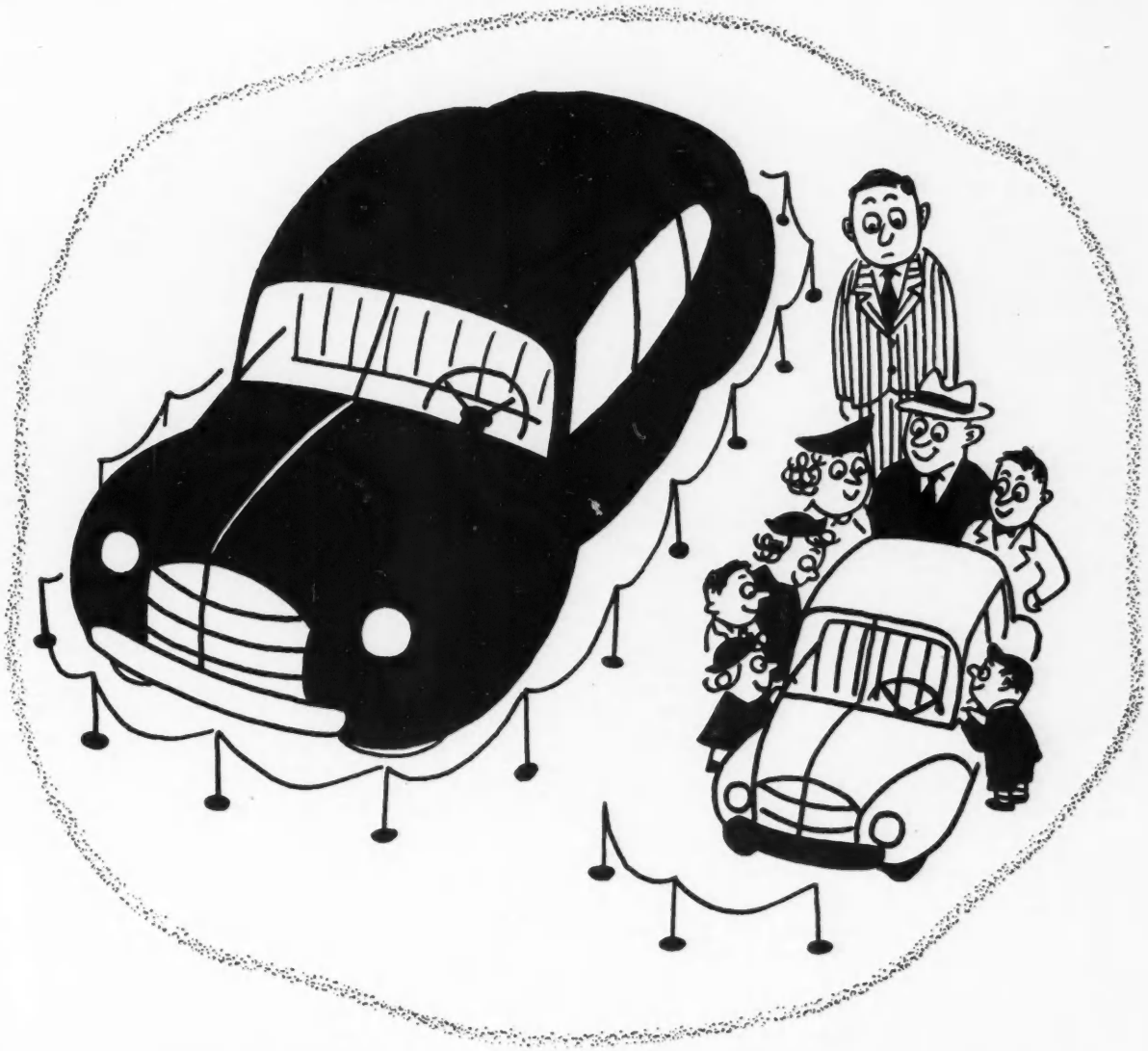
What Is Enriched Flour?

Enriched white bread and white flour have added to them iron and three of the B-vitamins —thiamine, riboflavin, and niacin. In the following table are data showing how patent flour of 72 per cent and lower extraction compares with the minimum government standards for enriched wheat flour.

FLOUR	THIAMINE	RIBOFLAVIN	NIACIN	IRON
	mg./lb.	*mg./lb.*	*mg./lb.*	*mg./lb.*
72% or lower extraction	0.25–0.40	0.10–0.15	4–6	2–4
Enriched, meeting minimum government standards	2.00	1.2	16	13

In 1939, the basis for the flour enrichment program was laid, and during World War II, special emphasis was given to enrichment, to the extent that the federal "War Food Order #1" was issued, which required the enrichment of all "white" bread. This Order was withdrawn in October, 1946, leaving to the individual states the matter of enrichment. Since then twenty-two states have passed their own enrichment legislation.

The questions arise: Are we doing all we can to "improve the nutritional status of human beings?" Are those of us who are responsible for feeding groups of people using whole grain or enriched products wherever we can? Are we ourselves well informed about them? Are we encouraging others to use them?—*Marguerite L. Pettee, Chairman, Community Nutrition Section Project #2, 1947–48, on "Consumer Education on Enriched and Fortified Products."*



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Book Reviews

How to Write for Homemakers. By Lou Richardson and Genevieve Callahan. Ames, Iowa: The Iowa State College Press, 1949. Cloth. Pp. 206. Price $3.

The title of this book does not tell the whole story. The R/C (Richardson-Callahan) formula outlined here is as terse and to-the-point as the ℞ of the physician. It is a prescription not only for successful writing but for clear thinking in everyday living.

Whether experienced home economist or beginner, regardless of the field, this formula will be as helpful in outlining the day's work in the diet kitchen as in writing an article for homemakers. It is an easy-to-follow guide to planning demonstrations, preparing reports, or writing result-getting business letters.

The R/C formula—visualize, analyze, organize, and dramatize—is a common sense basis for all communications with others, both in personal and professional life. The four steps of the formula—which appear repeatedly throughout the book on a measuring cup diagram—are practical and helpful, and you will rely on them in day-to-day activities as you depend on the measuring cup for successful cooking.

How to Write for Homemakers is fun to read. While reading it, however, you will find it piques your subconscious and stimulates you to do a better, more effective job. Sparkling marginal notes are as refreshing and helpful as a personal interview with the alert and successful authors themselves.

Chapters of particular interest to everyone are "Speeches and Programs—How to Make Them Interesting and Worth While"; "Letters, Memos, and Reports—How to Strengthen Them and Give Them Personality"; and special sections dealing with terminology, trade names, generic terms, definitions of processes in food preparation, and tables of weights and measures for food service.—*Beth Bailey McLean, Director of Home Economics, Swift & Company, Chicago.*

Religion, Diet, and Health of Jews. By J. Ida Jiggetts. New York: Block Publishing Company, 1949. Cloth. Pp. 125. Price $2.75.

Having this subject analyzed and evaluated by a non-Jewish person deserves special comment. Ida Jiggetts' first main stimulus in her eagerness to learn about the Jewish people began when she entered the profession of social work. One of the first cases assigned to her was that of a Jewish client. Then, while working on her Master of Arts degree at New York University, Mrs. Jiggetts used as the topic of her thesis, "An Analysis of the Diet of the Jewish People and Its Probable Influence upon Health." The book is an outgrowth of this study.

Mrs. Jiggetts gives an excellent interpretation of the religious practices and food patterns of the Jewish people. She emphasizes clearly that there is no such thing as a "Jewish" diet. This she explains on the basis that Jews have migrated from all parts of the world and hence their "cultural patterns, folkways and content of diet vary." Menus and a variety of dishes with recipes and food values are included.

Though some of the dietary restrictions originated in Biblical times, rabbis through the ages have proclaimed dietary measures for health protection. For example, shellfish are prohibited as food, the explanation being that they remained on the river bed and absorbed the impurities of the water, whereas fish with fins and tails approach the surface of the water for oxygen and pure food and are, therefore, considered more fitting to eat.

Of special interest are case studies which illustrate the strong influences that religious practices and dietary restrictions wield over orthodox Jewish people.

The various Jewish holidays are described briefly in such a way that the non-Jew can obtain an adequate and intelligent concept of the Jewish religion.

As the author states, "In working with any group of people it is not only wise but imperative to have a fairly complete knowledge of their ethnic and nationality background if successful contact is to be made and cooperation secured. A higher degree of respect for the religious practices and food patterns of the Jews would prevail were the public in general made keenly aware of the historical background and the religious basis of their major observances—the Sabbath, the holidays, feast and fast days."

An extensive list of excellent references is included.—*Anne Hurevitz, Clinic Nutritionist, Mount Sinai Hospital, Chicago.*

Recipes from Scotland. By F. Marian McNeill. Edinburgh, Scotland: Albyn Press, 1947. (Irving Ravin, 56 W. 93rd St., New York 25, N. Y., U. S. distributor.) Cloth. Pp. 94. Price $1.75.

A fascinating book, indeed, is *Recipes from Scotland.* Miss McNeill previously has published *The Scots Kitchen,* a larger book with old Scottish recipes. Many of these have been modernized and simplified for publication in *Recipes from Scotland.*

The introduction is, to coin a phrase, "entertaining and educational." Here, Miss McNeill discusses Scottish food customs and the differences between Scottish and English cooking. Basic food materials in Scotland are meal (oatmeal) and fish. In England, these materials are flour and meat. Famous the world over are Scotland's gifts to the breakfast table, porridge and orange marmalade. Recently, one hears more and more of Scotch broth, hotch-potch, smoked salmon, shortbread, and scones (rhymes with gone, not bone!). Breakfast and tea are the best Scottish meals, according to this author.

When it comes to cooking from the recipes in this little plaid cook book, however, all except skilled cooks had better leave it alone. Ingredients, amounts, and culinary equipment are all given in terms unfamiliar in the United States. We do not know whortleberries, hough, brambles, and castor sugar. We do not usually measure in ounces, or gills and breakfast-cupfulls. We do not use a brander, a kail-pot, or a girdle—not for cooking, that is.

Despite these language differences, the gourmet will enjoy reading and trying *Recipes from Scotland.*—*Virginia Monahan Bayles, Instructor in Nutrition and Dietetics, University of Denver, School of Nursing.*

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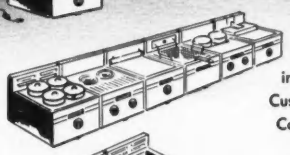

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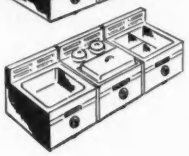

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Current Literature

Contributed by Janette C. Carlsen and Ethel M. Miller, The Johns Hopkins Hospital; Janet Engebretsen, Veterans Administration Hospital, Hines, Illinois; Quindara Oliver Dodge, Women's Educational and Industrial Union, Boston; and the Journal staff

THE AMERICAN JOURNAL OF DIGESTIVE DISEASES

Vol. 16, August, 1949

*The etiology and treatment of chronic ulcerative colitis. O. Bassler.—p. 275.

Vol. 16, September, 1949

*Studies on serum carotene in man. D. Adlersberg, S. Kann, A. P. Maurer, K. Newerly, W. Winternitz, and H. Sobotka.—p. 333.

*Relationship of amino acids to the nutritive value of proteins. M. Suhyun.—p. 301.

Etiology and Treatment of Chronic Ulcerative Colitis. Seven of the more important etiologies are advanced together with the treatment of each. In relation to diet, two fundamental rules are given: (a) Give the largest amount of protein foods possible in order to meet the shortages caused by diarrhea, infection, weight loss, anemia, avitaminosis, and so on. Amino acid and supplementary feedings should be given, but milk is not allowed. (b) The consistency of the diet should be fluid or semi-fluid, easily digested, low in residue.

Serum Carotene in Man. Tests were made showing that the elevation of the serum level of carotene administered in oils was relatively smaller and occurred at a slower rate than the absorption of vitamin A in oils in analogous absorption tests. Bile acids moderately accelerated the absorption of carotene from cottonseed oil, while lecithin caused pronounced acceleration and intensification of absorption. Butter was the superior carrier of carotene, probably due to its high lecithin content. Normal function of the liver is essential for absorption of carotene in man.

Relation of Amino Acids to Nutritive Value of Proteins. Man's daily diet is not limited to one type of protein. It is impractical to estimate daily, the amount of essential amino acids in man's diet, but present knowledge of nutritive aspects of protein in food stuffs makes it possible to recognize marked deficiencies and to correct them. Supplementation of protein with essential amino acids is simple and not hazardous to human life. It is important to note that components of proteins are not stored in the body and inadequate intake of a mixture results in nutritive failure.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES

Vol. 218, August, 1949

*Experience with 116 juvenile campers in a new summer camp for diabetic boys. A. J. Gabrielle and A. Marble.—p. 161.

Diabetic Camp. This is a report of the newly opened Elliott P. Joslin Camp for Diabetic Boys in Charlton, Massachusetts; 116 boys were cared for at a cost to them of nothing to $5 per day depending upon the ability to pay. Like the Clara Barton Camp for Girls, the new camp is a nonprofit organization with no additional charges for insulin or medical or nursing care. Facilities of the camp were complete with laboratory and infirmary. In case of serious illness, the boys were taken to the Deaconess Hospital in Boston. Upon arrival at camp 61 per cent of the boys stated they did not follow their diets regularly; many showed more than 2 per cent sugar and several diacetic acid. During the camp season the physicians strove to have the boys well controlled, yet free from glycosuric reactions. All campers were on weighed diets with intermediate nourishments. Results of the camp experience were gratifying, as the boys' health and vigor compared favorably with non-diabetic boys. It was found that a single daily injection of the new modified protamine insulin gave better control than any other method. The camp demonstrated its value as an adjunct for the treatment of diabetic children.

BULLETIN OF THE JOHNS HOPKINS HOSPITAL

Vol. 85, August, 1949

*The effect of sodium withdrawal upon the body weight in normal young men. C. B. Thomas, E. Howard, and A. Isaacs.—p. 115.

*Pyridine liver and kidney injury in rats; the influence of diet with particular attention to methionine, cystine and choline. J. H. Baxter.—p. 138.

Sodium Withdrawal. Because of the apparently abnormal metabolic characteristic of hypertensive individuals (in relation to sodium), observations were made on eighty-three male medical students in good health who submitted to the dietary regimen. A standard diet containing 1 gm. sodium chloride was given for three consecutive days; 12 gm. salt was added on the first two days. On the third day the added salt was withdrawn; body weights were checked daily. Several of the subjects submitted to duplicate tests which confirmed the first results. Eighty-one of the subjects lost weight following sodium restriction; the fact that the results could be duplicated demonstrated the cooperation the subjects showed in this study. It was concluded that a considerable portion of normal young men respond to sodium withdrawal in a manner similiar to that of the hypertensive individual.

Pyridine Liver and Kidney Injury in Rats. This is a detailed summary of animal experimentation with specific emphasis on the metabolic relationship of choline, methionine, and cystine. Since choline is being used rather extensively in treatment of human liver disease, the article will be of interest to many. On low-casein and low-choline diets, pyridine induced necrosis and fatty changes in the liver. Methionine supplements appeared to prevent injury as did cystine to a lesser degree. Choline plus cystine provided better protection. Pyridine proved more toxic when given in the diet than when administered by injection.

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THE CANADIAN JOURNAL OF PUBLIC HEALTH

Vol. 40, August, 1949

*The use and abuse of dietary standards. E. G. Young.—p. 327.

Canadian Dietary Standards. It is felt that the standards set by the Food and Nutrition Board of the National Research Council of the U. S. are not flexible and therefore not accurate because their standards are a mixture of both averages for groups of people and maximum figures for the individual. This limits the effective use of the standards. A proposed standard for adults and juveniles is recommended by the Canadian Board with figures for calories, protein, calcium, phosphorus, and vitamin A in relation to body weight; and figures for thiamine, riboflavin, and niacin in relation to caloric equivalents of the diet.

THE CANADIAN MEDICAL ASSOCIATION JOURNAL

Vol. 61, September, 1949

*Trial of vitamin E therapy in diabetes mellitus. E. H. Bensley, A. F. Fowler, M. U. Creaghan, F. Zahalan, F. Lax, H. Berish, and E. K. McDonald.—p. 260.

*Treatment of essential hypertension. E. Maurice.—p. 293.

Vitamin E and Diabetes Mellitus. A study of oral administration of vitamin E in diabetes mellitus was conducted in the Diabetic Clinic of the Out-Patient Department at Montreal General Hospital. Fifty-five diabetic patients were selected for study. Elevation of plasma tocopherol was the only demonstrable effect which could be attributed to the vitamin E therapy.

Treatment of Essential Hypertension. This article outlines the proper course of action to be taken in treating hypertension. Therapy includes (a) rest, sedation, and psychotherapy; (b) reduction of weight to normal limits; and (c) sodium restriction therapy. Kempner's rice diet is mentioned and the low-sodium diet discussed at length. The low-sodium diet is less inconvenient, more palatable, contains the same amount of sodium, and gives the same beneficial results as Kempner's rice diet. Emphasis also is placed on importance of the patient's learning to "slow his pace".

JOURNAL OF CLINICAL INVESTIGATION

Vol. 28, September, 1949 (Part I)

*The partial purification and properties of antibiotic substances from the banana. W. E. Scott, H. H. McKay, P. S. Schaffer, and T. D. Fontaine.—p. 899.

Vol. 28, September, 1949 (Part II)

*Evidence that renal sodium excretion by normal human subjects is regulated by adrenal cortical activity. A. Leaf and W. T. Couter.—p. 1067.

Antibiotic Substances from the Banana. The banana plant contains one or more substances with therapeutic possibilities. Extracts of stems inhibited growth of two Gram-positive, one acid-fast Gram-positive, and one Gram-variable bacterium.

Renal Sodium Excretion by Normal Subjects. Three normal young adults were maintained on fixed diets containing adequate calories and protein with very low sodium chloride content. At definite periods the sodium intake was abruptly increased by the addition of 480 milli-equivalents sodium chloride or citrate. With the initial diet there were: negative balance of sodium and chloride, urinary losses to a minimal amount in about five days, and loss of about 2 kg. weight. With administration of sodium, body weight increased. There also occurred a hemodilution as evidenced by decreased serum proteins and hematocrit and an increased glomerular filtration rate. Other protein metabolism changes occurred. It is believed that observed effects are best explained by changes in adrenal cortical activity. In the normal subjects, the conservation of body sodium by variation of renal excretion of sodium was the result of increased adrenal cortical activity due to low-sodium intake or decreased adrenal cortical activity when large amounts of sodium were administered.

THE JOURNAL OF PEDIATRICS

Vol. 35, July, 1949

*The celiac syndrome factors influencing its development with particular reference to hypothyroidism as a contributing cause. J. A. Johnson and P. J. Howard.—p. 91.

Celiac Syndrome and Hypothyroidism. Hypothyroidism and the celiac syndrome have in common abnormalities in the metabolism of proteins, fat, carbohydrate, and calcium, and gastrointestinal motility. It seems valid to assume that a deficiency in thyroid is the underlying constitutional defect in some cases. However, thyroid deficiency can explain only a few cases. The role of the liver in other instances warrants further study.

LANCET

August 6, 1949

*Diurnal variation in the fat content of breast milk. M. Gunther and J. E. Stainer.—p. 239.

August 13, 1949

*The effect of water and salt intake on prickly heat. G. O. Horne and R. H. Mole.—p. 279.

Variation of Fat Content of Breast Milk. This investigation substantiates the belief that there is a variance of the percentage of fat in breast milk. The variance shown was not related to meal times and was unaffected by the administration of food at night.

Effect of Water and Salt Intake on Prickly Heat. Prickly heat was relieved in ten subjects by increasing fluid intake and reducing salt intake. It relapsed with increased salt intake. Salt was only used in cooking and was not taken as medication. Eight to 12 pt. water were taken daily.

THE NEW ENGLAND JOURNAL OF MEDICINE

Vol. 241, August 25, 1949

*Gastrointestinal allergy. F. J. Ingelfinger, F. C. Lowell, and W. Franklin.—p. 303.

Vol. 241, September 1, 1949

*Gastrointestinal allergy. F. J. Ingelfinger, F. C. Lowell, and W. Franklin.—p. 337.

Gastrointestinal Allergy. According to the two articles on this subject, it appears that experimental production in animals and man of reactions in the gastrointestinal tract are due to contact of sensitized tissue with antigen. Evidence of spontaneous occurrence of gastrointestinal allergy in man is good but not conclusive. The incidence of such reactions cannot be determined at present because there are apparently no manifestations peculiar to gastrointestinal allergy alone, methods of diagnosis are not accurate, and the validity of indirect tests cannot be assessed at present. It is possible, however, to make the diagnosis of gastrointestinal allergy if symptoms invariably follow contact with a normally inactive substance and if other causes such as psychic effect and mechanical irritation are excluded.

NEW YORK STATE JOURNAL OF MEDICINE

Vol. 49, September 1, 1949

*Metabolic aspects of vascular degeneration in diabetes mellitus. G. E. Anderson.—p. 2055.

Vascular Degeneration in Diabetes. Arteriosclerosis in the diabetic is frequently found in the most minute capil-

	Calories	Protein Gm.	Calcium Gm.	Copper mg.	Iron mg.	Phosphorus Gm.	Vitamin A I. U.	Thiamine mg.	Riboflavin mg.	Niacin mg.	Ascorbic Acid mg.	Vitamin D I. U.
National Research Council Allowances, Sedentary Man (154 lbs.)	2,400	70	1.0	1.2	12	1.5	5,000	1.2	1.8	12	75	Small Amount
Ovaltine in Milk, 3 Servings *	676	32	1.12	0.5	12	0.94	3,000	1.16	2.0	6.8	30	417
Percentages of N. R. C. Allowances Provided by 3 Servings* of Ovaltine in Milk	28%	46%	112%	42%	100%	63%	60%	97%	111%	57%	40%	Abundance

*Each serving made of ½ oz. of Ovaltine and 8 fl. oz. of whole milk.

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The aim of the dietary at all times and under all conditions is to provide ample amounts—not just minimum amounts—of all nutrient essentials. Only when the daily nutrient intake is fully adequate, based on the most authoritative nutritional criteria, can the possibility of adequate nutrition be assured. It is for this reason that a food supplement assumes great importance in daily practice. It should be rich in those nutrients most likely deficient in prevailing diets or in restricted diets during illness and convalescence.

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laries and should be studied only as one part of vascular degeneration. Cholesterol metabolism is probably but one factor in the lipid metabolism, and phospholipids probably play a large part. The role of other phospholipids and fatty acids must be established before cholesterol can be blamed for the entire process of degeneration. When vascular degeneration has supervened, the best outlook for life itself is avoiding obligatory fat metabolism.

SCIENCE

Vol. 110, September 9, 1949

*Thymidine and vitamin B_{12}. M. H. Wright.—p. 257.

Thymidine and Vitamin B_{12}. Some thymidine can replace vitamin B_{12} in the nutrition of certain lactic acid bacteria. It has been suggested that vitamin B_{12} may be a coenzyme in the synthesis of thymidine from thymine. This experiment showed that thymidine in the presence or absence of folic acid supported growth comparable to that produced by vitamin B_{12} only in the presence of folic acid. Thymine could substitute only partially for the folic acid.

SOUTHERN MEDICAL JOURNAL

Vol. 42, August, 1949

*Vitamin B_{12} in pernicious anemia. M. F. Beard, M. Nataro, and L. H. Layman.—p. 677.

Pernicious Anemia and Vitamin B_{12}. Vitamin B_{12} was given to patients with pernicious anemia in an effort to establish the minimal intramuscular dosage which would effect an optimal hematological response. It is believed that 0.001 mg. (1 mcg.) vitamin B_{12} is approximately equivalent to 1 I.U. refined liver extract. More research must be done before conclusions may be drawn regarding vitamin B_{12} therapy on the neurological picture of pernicious anemia. A plan of therapy designed to overcome the depleted reserves of the liver in relapse of pernicious anema and to maintain adequate storage are discussed.

FOOD INDUSTRIES

Vol. 21, September, 1949

*Ten legal decisions worth knowing. L. T. Parker.—p. 50.
*Don't stop at body and texture—get flavor. W. A. Cordes.—p. 53.
*Bright future seen for Hawaiian macadamia nuts. A. A. Smyser.—p. 66.

Useful Higher-Court Interpretations. This article gives many illustrations of court decisions that prove the importance and necessity for food producers knowing the law, in order to avoid violation of the Federal Food, Drug and Cosmetic Act, the interstate commerce laws, or other government statutes. It tells how contracts and patents can be declared void, often for the slightest deviation from the written contract, and this article contains numerous other examples of legal decisions.

Flavor in Cottage Cheese. Flavor is even more essential than body or texture, yet cottage cheese producers often neglect to take the precautions necessary to achieve good cottage cheese. Listed in this article are pointers for attaining the desired flavorful results: (a) good quality of skim milk, (b) good culture, (c) sterilization of equipment, (d) proper control of temperature, (e) careful curd cooking, and (f) high quality cream for creaming the curd. Also listed are the ten troubles that cause poor keeping qualities in cottage cheese and their remedies: (a) incomplete pasteurization, (b) contamination from wooden equipment, (c) contaminated culture or coagulating solution, (d) failure to cover cheese vats, (e) hand contamination, (f) general insanitary practices and habits, (g) contaminated wash water, (h) failure to sterilize equipment thoroughly, (i) contamination during creaming and mixing, and oftentimes (j) faulty packaging operations.

The Nut with a Future. Round, tasty macadamia nuts will soon be a delicacy for widespread consumption. Since their introduction to Hawaii from Australia more than forty years ago, they have been promoted by large business establishments and welcomed by eager consumers. Tropical forests have been cleared on a large scale and macadamia trees have been planted on land not adapted to the cultivation of sugar and pineapple and the other produce of Hawaii. These easily harvested nuts require long processing to make them fit for storage and ultimately consumption. They are expected to be well received in the U. S.

THE NATION'S SCHOOLS

Vol. 44, October, 1949

*The administrator sets the pace. M. deG. Bryan.—p. 40.
*Planning the lunchroom kitchen.—p. 42.
Two views of one building. T. G. Flanagan.—p. 50.
The separate cafeteria building as worked out for four high schools in Ardmore, Pa. W. C. Scheetz., Jr.—p. 52

School Lunch. The expansion of public school feeding is due to many trends: (a) the widening conception of public education, (b) the great discoveries of the sciences of nutrition and psychology, (c) the conception of physical, mental, and emotional well-being, (d) rising standards of schools, and (e) the broader understanding of the interdependence of all producing and consuming groups in the small community, the nation, and the world as they relate to the economics of production and consumption. The need for better feeding facilities and a more imaginative treatment of menus and general food appearance is emphasized. The importance of the principal's support in the successful execution of administrative duties is stressed, and the standards that should be set for the training and employment of personnel are listed. Throughout the article the main theme is: better school standards prepare better citizens for an improved community, nation, and world relationship.

Lunchroom Kitchen Arrangement. The considerations in planning a school lunchroom are: (a) number of pupils to be served, (b) age of children, (c) the number of lunch periods needed for serving pupils, (d) type of lunches served, (e) quantities in which food is to be purchased, and (f) extent of use by community. The kitchen must be broken down into areas for the efficient preparation of a complete hot lunch. This article enumerates the types and locations of equipment for a school kitchen serving 150 to 500 or more pupils. Not only does the article deal with the food preparation, but it follows through to discuss problems of sanitation and convenient methods for dishwashing, refrigeration, and storage.

RESTAURANT MANAGEMENT

Vol. 65, September, 1949

Preparing piquant potato dishes. A. Easton.—p. 40.
*Equipment maintenance manual. A. H. Clawson.—p. 46.
Ideas for developing profitable mid-morning snack sales. M. L. Casteen.—p. 54.

Equipment Maintenance. This article tells the procedure for replacing dowel pins in cup and dish racks, and lists the equipment and supplies needed to accomplish this purpose. The cleaning of coffee urns is described in detail; and cleaning products, other equipment, and supplies are enumerated. Difficulties, emphasized in boldface type, are carefully explained so that they can be anticipated in cleaning and avoided.

Festive touch for Holiday Menus . . .

delicious Quaker Nut Bread
spread with cream cheese and chopped cherries

It's *little things*—like "something extra special" on meal-time trays—that give patients such a "lift" at Christmastime.

And it's so easy for you to add this "special" touch. Quaker Nut Bread, spread with softened cream cheese (filled with chopped candied cherries, stuffed olives, dates or nuts), is the cheeriest addition imaginable.

Appetites perk up right away when patients see this extra special treat. And they'll relish the delightfully "home-baked" flavor, the tender, moist texture of Nut Bread made with nourishing Quaker Oats or Mother's Oats (Quaker and Mother's Oats are the same).

Serve Quaker Nut Bread with lunch or dinner frequently throughout this holiday season. Economical, easy to make . . . and a real Christmas treat for your patients!

• Another in the new series of Quantity Recipes prepared for dietitians by the Quaker Oats Institutional Test Kitchen.

• If you are not on our recipe card mailing list, please write—Mary Alden, Institutional Test Kitchen, The Quaker Oats Company, Chicago 4.

HOLIDAY HINT:

At Christmas dinner, brighten up each tray with a sprig of holly. Cost is small, trouble is slight . . . and patients *will* appreciate it!

NUT BREAD

Quick Bread
50 servings
(6 small loaves)

Portion: 2 slices — Total Weight of Batter: 8 lb. 9 oz.

INGREDIENTS	AMOUNT	WEIGHT	COST
Shortening	1 cup	½ lb.	
Brown Sugar	3 cups	1½ lb.	
Eggs	4 eggs	7 oz. (E.P.)	
Flour, sifted	2 quarts	2 lb.	
Salt	1½ tablespoons		
Baking Powder	¼ cup		
Soda	1 tablespoon		
Buttermilk	1½ quarts		
Quaker Oats, uncooked (quick or old-fashioned)	1 quart	11 oz.	
Chopped nutmeats	2 cups	½ lb.	

Directions

1. Cream shortening and sugar together on mixer about 1 minute at medium speed.
2. Add eggs and continue beating at medium speed about 30 seconds.
3. Sift together flour, salt, baking powder and soda. Add sifted dry ingredients and buttermilk to creamed mixture beating at low speed about 30 seconds. Scrape bottom of bowl once or twice. *Do not overbeat.*
4. Add rolled oats and nutmeats beating at low speed until blended, about 15 seconds.
5. Bake in greased paper-lined bread pans (six 1-lb. size) in moderate oven (350° F.) about 1 hour. Store one day before slicing.

THE QUAKER OATS COMPANY
INSTITUTIONAL KITCHEN

NUT BREAD

THE QUAKER OATS COMPANY
CHICAGO 4, ILLINOIS

News Notes

New A.D.A. Constitution. The new constitution for the American Dietetic Association, as submitted to the members for approval, was accepted at the meeting of members on October 10 in Denver.

Interns Graduate. Nine dietetic interns completed their training at the *Indiana University Medical Center*, Indianapolis, on August 29. Those awarded certificates were: Lorraine Bursley, Rhode Island State College; Jean Cantrell, Stout Institute; Janelle Cole, Texas State College for Women; Betty Jean Greer, University of Cincinnati; Mary Joe Jedlicka, Oklahoma A & M College; Mary C. Maurer, University of Akron; Eileen Peck, Cornell University; Preciosa I. Pineda, University of Philippines; and Esther Margaret Reed, University of West Virginia. A banquet was given in honor of the graduates.

On September 9, five dietetic interns were given their certificates for accomplishing and completing the administrative dietetic internship of the *Women's Educational and Industrial Union*, Boston. The graduates are: Luella T. Rouse, now Assistant Director, Vocational Training Department of The Union, and a member of the Simmons College faculty as Assistant in Institution Management; LaVerne Snyder, now Assistant Dietitian, Harvard Medical School; Betty Ann Hensing, Administrative Dietitian, Iowa State University Resident Halls; Doris Jean Patterson, a member of the restaurant staff, Metropolitan Life Insurance Company, New York City; and Helen M Lysell, responsible for menu planning and buying in three sorority and six fraternity houses at the University of Washington, Seattle.

The Executive Committee of The Union in July decided with much regret to withdraw The Union administrative internship for the current year (1949–50). Subsequent planning and reorganization led them to decide in September to discontinue the course permanently, except in the event that the committee now working develops an approved administrative dietetic internship in Boston through the auspices of another sponsor.

Army Dietitians Receive Advance Training. In line with the Army's career management plan for dietitians, announced in the November, 1948, issue of the JOURNAL two dietitians, from the WMSC are receiving advanced academic training this year. They are: Captain Gladys Edwards, who is working towards a master's degree at Ohio State University, Columbus, and Captain Nancy Huston, who is attending Teachers College, Columbia University, New York City.

The first three Army dietitians to receive training under this program completed their graduate study in August. They are: Major Helen M. Davis who took advanced work at Columbia University and who is now assigned to the Dietitian Section of the Office of the Surgeon General, Washington; Captain Katherine E. Manchester, who attended Cornell University, and is now stationed at Valley Forge General Hospital, Phoenixville, Pennsylvania; and Captain Elsie K. Miller, who studied at the University of Wisconsin and is presently assigned to the teaching staff at Brooke General Hospital, Ft. Sam Houston, Texas.

Dr. Edith L. Allen. The A.D.A. has received word of the passing of Dr. Edith L. Allen on August 18. Dr. Allen had been a member of A.D.A. since 1932 and a life member since 1936. She had formerly been a writer for the Department of Agriculture.

Diet Manual for Small Institutions. Dietitians of the Virginia State Department of Health have prepared a twenty-two-page "Dietary Manual for Small Hospitals and Nursing Homes." Before publication, the material was reviewed by members of the Virginia Dietetic Association. In it is included a section on "Diets" in which are given the normal diet, and the following therapeutic diets: soft, liquid, cardiac, low-salt, low-residue, bland, and diabetic. The second section on "Food Management and Service" covers the following topics: menu planning, buying suggestions, quantities of food for fifty, food preparation, food storage, and food service.

Consultant Specialists Added to Children's Bureau. In October, the Division of Health Services of the Children's Bureau, Federal Security Administration, appointed five specialists to serve as consultants throughout the country. The fields of interest of these specialists are: prematurity, obstetrics, hearing and speech, cerebral palsy, and child psychiatry. In the area of prematurity, the specialist appointed is Dr. Harry H. Gordon, Professor of Pediatrics, University of Colorado, who spoke to the members of A.D.A. at a special panel program on prematurity at the Denver convention in October.

Booklet on Home Economics Careers. "Opportunities to Prepare for a Career in Home Economics" is the title of a vocational guidance booklet prepared by the Department of Home Economics, Bowling Green State University, Bowling Green, Ohio. In it are presented outlines of opportunities in homemaking, teaching, business service. and institution management. These are followed by an explanation of how the various college courses offered at Bowling Green are integrated into the training for these various career fields. Informative illustrations, two-color printing, a pleasing format, and easy-to-read copy make the booklet both attractive and useful. Copies are available for distribution to libraries, home economics teachers, and vocational guidance counselors on request.

New Film on Teeth. "Save Those Teeth" is the title of a new film produced by Encyclopaedia Britannica Films Inc., in collaboration with J. Roy Blayney, D.D.S., Director, Walter G. Zoller Memorial Dental Clinic, University of Chicago. The planning and reviewing of the content of the film were done in consultation with experts from the fields of education, social work, dietetics, psychiatry, and dentistry. Prepared to be useful at the levels of the primary and middle grades, as well as for adult groups, it deals with dental health and hygiene, including adequate brushing; proper diet; restricted use of sugar, particularly between meals (and possible substitutes); and the fluoride treatment. A teacher's and discussion leaders' guide has also been prepared for use with the film, which may be obtained on a rental basis or may be purchased outright. Further information can be obtained from Encyclopaedia Britannica Films, Inc., Wilmette, Illinois.

Pamphlets on U. S. Food Buying. The Bureau of Human Nutrition and Home

Army Announcements Concerning Personnel

Edyth H. Emerson, R-10047, has been promoted from the rank of First Lieutenant to that of Captain.

The Department of the Army has released the following official list of names of dietitians in the Women's Medical Specialists Corps who have been separated from from service:

Capt. Doris C. Klauman, R-789, 1802 H St., Belleville, Kans.
1st Lt. Virginia E. McGary, R-2501, 2222 Millington Green, Madison 5, Wis.

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Economics, U.S.D.A., has released the third and fourth pamphlets of its new "Commodity Summaries" series in which are reported the results of 1948 studies of food consumption in sixty-eight cities. The third report deals with grain products and the fourth with purchasing of eggs and poultry. In each are given data on nation-wide and regional purchasing patterns for these foods, as well as statistics relating to income and purchasing.

Potato-Eating Habits. A recent survey made by the Bureau of Agricultural Economics, U.S.D.A., indicates that more potatoes are consumed by the restaurant-eating public in Cincinnati than in New Orleans. Interviews with the food buyers of independent eating establishments showed that 100 lb. potatoes a week are purchased in Cincinnati, compared to only 80 lb. in New Orleans. The explanation for this is that in New Orleans, rice frequently is substituted for potatoes. Mashed potatoes are served most often in Cincinnati and French fries in New Orleans, although in both cities the largest quantity of potatoes is used in French frying. Potato salad was in third place. Details of this survey may be found in the pamphlet entitled "Potatoes in Hotels and Restaurants" published by the Bureau of Agricultural Economics.

Plentiful Foods. The following are listed as plentiful foods for December by the U.S.D.A. Production and Marketing Administration:

Fresh fruit and produce

Apples	Pears, winter
Cranberries	Oranges
Grapes	

Meat, poultry, and fish

Chickens	Pork products
Fish, frozen	Turkeys

Miscellaneous foods

Beans, dried	Molasses, sugarcane
Corn, canned	Nuts, tree
Dairy products, manufactured	Peas, dried
Eggs	Prunes, dried
Fat, cooking	Raisins, dried
Honey	Sirup, sugarcane

It is requested that apples, cranberries, pork products, tree nuts, and turkeys be given special stress during the month of December.

Southern Food Habits. According to Dorothy Dickins of the Mississippi Experiment Station, southern meals have been changing considerably in recent years. Records of foods used by white and Negro families in the cotton plantation area of Mississippi in 1936 and in 1948 show many differences. Dr. Dickins comments that higher incomes have much to do with the shift away from the traditional rural southern diet. The trend in cereal foods has been toward a wider variety of purchased products with the greatest increase in white bread, cookies or cakes, and crackers. White families used more spaghetti and macaroni. Both Negro families and white sharecroppers used more rice, and many white families reported using pancake mix. More fruit is being eaten in the South today, too. In 1936, as many as one-sixth of the Negro families were eating no fruit. In contrast, 1948 saw many of these families eating canned peaches, oranges, and apples. White families, too, are consuming more and a greater variety of fruit. The home-made sorghum sirup, once a staple, is being replaced by commercially made sirup, and many families are using jams, jellies, and preserves in place of sirup. The use of soft drinks in the home has also increased. No family in the 1936 study reported serving soft drinks at home, but by 1948 every group reported them.

Meat Purchasing in U. S. A survey conducted by the Bureau of Human Nutrition and Home Economics, U. S. D. A., revealed that 24 cents out of every dollar city families spend for food goes for meat. An additional 6 cents is spent for fish and poultry. Food itself takes about one-third of the family's weekly income. City homemakers buy more beef than any other meat, with pork a close second. Ground beef is the most popular beef product used. Income affects the amount families use; as income rises to $4,000 a year, families use more ground beef, while those over $4,000 use less. Next to beef and pork, poultry—mainly chicken—is used most widely. Bologna, frankfurters, and other luncheon meats rank next to poultry. Fish, lamb, and veal are purchased less frequently by these city families.

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Spending for Fats and Oils. Among the findings of a survey made by the Bureau of Human Nutrition and Home Economics, U.S.D.A., only 42 per cent of city families with incomes under $1,000 use butter one or more times a week, compared with 82 per cent of the families with incomes over $7,500. Forty per cent of the families with over $5,000 income and half of the under-$5,000 families used margarine in the week of the survey. Since 1942, more margarine and other shortenings are being used and less butter and lard. The recent survey showed that only two-thirds as much butter is used by families today as in the war year, but three times as much margarine. In 1942, when butter was about 44 cents a pound and margarine 22 cents, city families used six times as much butter as margarine. By 1948, with butter at 89 cents and margarine at 44, city families were using only 1½ times as much butter as margarine. The study showed that income has less effect on this group of items than most types of foods families buy, but it nevertheless does affect the use of certain fats and oils, such as butter and margarine.

Apple Ice and Ice Cream. Research at the New York State Experiment Station, Geneva, N. Y., has developed two new products from apples: apple ice and apple ice cream with delicate fresh flavor of well-ripened apples instead of the familiar cider flavor. By adding ascorbic acid to the apples during or immediately after milling and before pressing, the Station has found that it can delay the browning and change of color in the juice until it can be deaerated and preserved by pasteurization. Improved methods have made it possible to concentrate this natural juice by freezing. By using the concentrate, apple ice of any desired flavor-strength can be made, the Station reports. That made with 40 per cent of the concentrate was preferred in taste tests. A pleasing mild-flavored ice was made with juice and sugar, but a far more pleasing and distinctly flavored ice was made with juice, concentrate, and sugar. Apple ice cream has also been made successfully by the Station from apple juice and apple juice concentrate, but the researchers recommend a mildly acid juice as the best for ice cream and a higher acid juice as preferable in making the ice.

Vitamins in Walnuts. The California Experiment Station recently completed a study of the vitamin content of walnuts. The findings revealed that thiamine, riboflavin, and niacin are present in appreciable amounts. In thiamine, walnuts rate along with such foods as whole grain cereals, most lean meats, liver, egg yolk, and dried peas and beans. In riboflavin, they rank with such vegetables as cauliflower and broccoli, and in niacin, walnuts are superior to fruit, milk, eggs, and many of the fresh vegetables.

Secret of Meringue Success. At the New York State Experiment Station, studies have been made on methods of preparing meringues. Familiar troubles with meringues are: shrinkage, "weeping," wateriness underneath, stickiness which makes cutting difficult, toughness, and "beading" or small, moist droplets on the surface. The egg whites should be at room temperature, and a pinch of salt added for each white. They should be beaten until the foam is relatively fine and forms rounded peaks when the beater is lifted out. The 2 Tbsp. sugar for each white should be added gradually, and the beating continued until the mixture is stiff but not dry.

It was found that meringues baked on hot fillings cook more evenly and were less likely to "weep" than those baked on cold fillings. Baking at 425°F. for 4 to 4½ min. protected the meringues against leakage. At this temperature stickiness and shrinkage were also prevented. The 4- to 4½-min. cooking time was found to be best, for too-long cooking caused beading due to overcoagulation of the whites.

Contrary to the popular opinion that only top quality eggs should be used for meringues, the New York Experiment Station has found that satisfactory meringues can be made from New York grades fancy, A, B, and C, which correspond closely to U. S. grades AA, A, B and C. The whites from the lowest grade eggs did give the meringue an "off" flavor, but this could be masked by adding $\frac{1}{16}$ tsp. cream of tartar for each egg white. The cream of tartar also helped to hold up the meringue.

News of State Associations

Arizona Dietetic Association. The annual meeting of the Arizona Dietetic Association was held in Tucson on October 21. Section and committee reports were given, as well as an account of the A.D.A. convention in Denver. The principle speaker of the meeting was Ben Wheat, Department of Anthropology, University of Arizona, who spoke on the "Nutrition of the American Indian."

At the business meeting, it was voted to establish a scholarship for a senior student in foods and nutrition at the University of Arizona or any other Arizona institution offering such a major. The recipient of this scholarship must intend to continue to work to meet the qualifications for membership in the A.D.A. The amount of the scholarship will be $50 for each of the senior-year semesters. The scholarship will be started at the beginning of the school year 1950–51.

California Dietetic Association. The first meeting of the *Bay Section* was held on September 20 at the Children's Hospital of the East Bay in Oakland. The dietetic interns were the guests of honor. Walter Mangold, Sanitarian, University of California, spoke on "Sanitary Practice in Food Service Institutions." At the

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October meeting, the group met for dinner in San Francisco and heard Dr. Marian Josephi, the California State Department of Public Health, talk on "Feeding of Children with Long Term Illness."

Members of the Bay Section were responsible for the American Dietetic Association exhibit at the national convention of the American Dental Association held in San Francisco the week of October 17. The display consisted of food models illustrating a day's menu for a child ten to twelve years old.

Connecticut Dietetic Association. On November 3, the Connecticut Dietetic Association met in New Haven. The program included the following discussions:

"Achieving High Food Standards in Food Service" by Lucille Streater, Cafeteria Manager, Macy's, New York City

"Your Responsibility for Future Dietitians" by Evelyn Carlson, Administrative Dietitian, Aetna Life Insurance Cafeteria, Hartford

"Child Health Services in Connecticut" by Dr. Harold J. Root, Chairman, Connecticut Study of Child Health Service, Waterbury

"Good Nutrition for Connecticut School Children" by Dr. Martha Potgieter, Associate Professor, University of Connecticut, Storrs

At the business meeting, reports of the A.D.A. convention in Denver were given by the state's delegates, and new officers were elected. Preceding the meetings, dietitians were conducted through the Yale Dining Halls.

Georgia Dietetic Association. The joint fall meeting of the Georgia and Atlanta Dietetic Associations was held in Atlanta on November 4. The principle speaker was Arthur J. Speer, Associate Professor of Industrial Management, Georgia Institute of Technology, who talked on "Supervisory Development." Reports of the American Dietetic Association's 32nd annual convention were given.

The newly-elected officers include: President, Gertrude McDonald, Lawson VA Hospital, Chamblee; President-Elect, Nell Wier, Warren A. Candler Hospital, Savannah; Vice-President Rubye Jones, VA Hospital, Dublin; Secretary, Priscilla Reynolds, Grady Memorial Hospital, Atlanta; and Treasurer, Maybess Cone, Emory University Hospital, Emory University.

Pennsylvania Dietetic Association. Officers of the *Central Pennsylvania Dietetic Association* are: President, Winifred Ludwisck; Vice-President Lois Brownell; Secretary, Evelyn Messick; and Treasurer, Dorothy Beachley.

The *Lehigh Valley Dietetic Association's* officers are: Eleanor Anderson, President, Allentown General Hospital; Marie Quinn, Vice-President; Betty Jeanne Peterson, Secretary, St. Luke's Hospital, Bethlehem; and Mary Louise Burkhart, Treasurer.

The following are the officers of the *North Eastern Dietetic Association*: President, Jane L. Smith; Vice-President, Mary E. Murray; Secretary, Eleanor Stout; and Treasurer, Clare Donahue.

The *Philadelphia Dietetic Association* met at the Consolidated Beef Company in Philadelphia on October 19. Kay Nawn, a specialist in the Livestock Branch of the U.S.D.A.'s Production and Marketing Administration, discussed grading of meat, using color slides and charts, and a representative of the federal government Meat Grading Service explained briefly the acceptance service which is available to large-scale purchasers. After the meeting, the guests were shown through the plant.

The *Pittsburgh Dietetic Association* lists its new officers as: Melva B. Bakkie, President; Florence B. Fralin, Vice-President; Barbara King, Secretary, and Catherine Wesner, Treasurer.

Tennessee Dietetic Association. The Tennessee Dietetic Association met in Knoxville, November 4 and 5. The speakers on the program were: Dr. C. L. Comar, Laboratory Director and Research Coordinator, Atomic Energy Commission, who chose "Radioisotopes in the Study of Nutrition" as his subject, and Jessie W. Harris, Vice-Dean, College of Home Economics, University of Tennessee, whose topic was "Wanted and Needed: More Dietitians!" In addition, the dietitians were conducted on interesting trips to the dietary departments of the East Tennessee Baptist Hospital and of St. Mary's Hospital, as well as to the Oak Ridge Museum and Hospital.

Texas Dietetic Association. The annual convention of the Texas Dietetic Association was held October 28 to 29 at the Shamrock Hotel, Houston. A program on nutrition included talks by Arild E. Hansen, M.D., Chairman, Department of Pediatrics, University of Texas School of Medicine, whose topic was "Advances in the Field of Nutrition Which Concern Infant Feeding," and by Roger J. Williams, Ph.D., Professor of Chemistry and Director, Biochemical Institute, University of Texas, who spoke on "Individuality in Nutrition."

During the administration meeting the talks were given by Ross Garrett, Management Specialist, on "Relation of Dietary Department Spending to Hospital Spending;" James Taylor, Head, Distributive Education, University of Houston, on "Organization"; and Agnes Cassity, Assistant Chief Dietitian, VA Hospital, on "Employee Training Programs." A round table discussion on "Equipment Planning for Institutions" concluded the program.

In addition, several field trips were planned which included tours of the Shamrock Hotel's kitchens, the Cullen Nurses' Home, the dietary departments of the New Hermann Hospital and the VA Hospital, and the Joske's Department Store.

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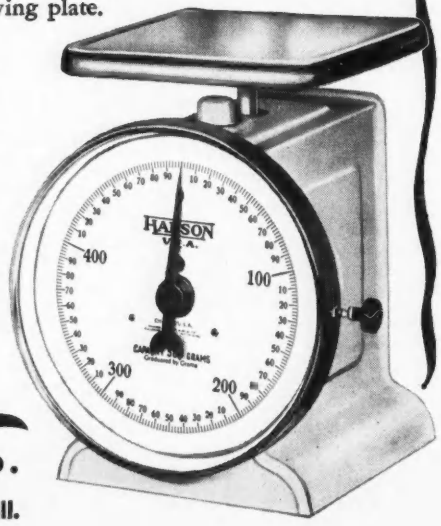

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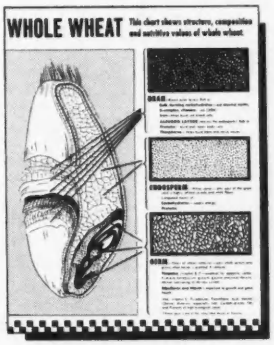

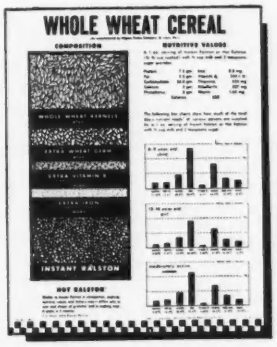

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Washington State Dietetic Association. The newly elected officers of the Washington State Dietetic Association are: President, Mildred Bonnell; Vice-President, Juanita Kahler; President-Elect, Eudora Fulkerson; Secretary, Elisabeth K. Williams; and Treasurer, Dorothy Hollenbeck. The year's work program was initiated at the convention in Seattle on November 4 and 5. Among the speakers were Seattle doctors and leading authorities on the subject of nutrition in dentistry, infant nutrition, personnel, equipment, and food production. The popular round-table discussions as well as the report of the Denver national convention took a prominent part on the program. Speakers included Katherine Mitchell Johnson, Past-President of A.D.A., and Dorothy Anderson who talked on her recent trip to Europe.

The *Seattle Dietetic Association* held its first meeting of the year on October 6 at the Virginia Mason Hospital Nurses' Home. Dr. Leonard Mathy, Department of Economics, University of Washington, spoke on the topic "What the Devaluation of the British Pound Means to the Dietitian."

Association Activities

International Dairy Exposition Exhibit. The Indiana Dietetic Association was fortunate in obtaining a booth for an exhibit at the International Dairy Exposition October 8 through 15 at the Indiana State Fairgrounds in Indianapolis. Preparations for the exposition have been in process for about three years. The exposition was highlighted not only by all types of cattle shows but also the "Festival of Dairy and Related Foods," which was the first of its kind to be held in the U. S. This festival was held in the Agriculture and Horticulture Building where there were many commercial and educational exhibits and daily demonstrations by eight nationally known home economists. An "ultra" dairy bar and style shows by leading department stores were included in the events given in the same building.

The Indiana Dietetic Association exhibit consisted of posters with the overall theme of "Eat the Seven Basic Foods." The three posters listed a daily Basic Seven menu and daily food allowances for diets to gain and lose weight. Weight scales and a standard height-weight table were in the booth so that people could judge the type of diet they should follow. Dietitians from Indianapolis were on hand at all times to answer any questions.

Contributions to A.D.A. Special Funds. The Indiana Dietetic Association recently voted a sum of $200 to be given to the A.D.A.—$100 of which is to be earmarked for public relations work, the other half to be used for vocational guidance activities.

A gift of $250 was received from the Texas Dietetic Association for public relations and the Minnesota Dietetic Association has also voted a sum of $100 for A.D.A.'s public relations activities.

Food and Nutrition Board Meeting. Gladys E. Hall, the Association's liaison representative to the Food and Nutrition Board of the National Research Council, attended the meeting of the Board in Washington, D. C., November 4 and 5.

National Officers and Staff Attend State Meetings. Our national representatives have been active this fall in attending numerous state dietetic association meetings. Lillian Storms Coover, President-Elect, spoke at the Texas meeting in Houston, October 28 and 29; she also attended the Nebraska meeting in Lincoln on November 12. Grace Bulman, Vice-President, 1948–49, traveled to Great Falls, Montana, for the meeting there on October 15. On October 29, Dr. Ercel Eppright, Professional Education Section Chairman, participated in the South Carolina meeting at Columbia. At the same time Marguerite Pettee, Chairman of the Diet Therapy Section, spoke at the Florida meeting at Wakulla Lake. Adelia Beeuwkes, Community Nutrition Section Chairman, 1948–49, attended the Missouri meeting in St. Louis on November 11. Margaret Ross, Professional Activities Director, was the representative at the Illinois meeting, November 11–12 at the Allerton Estate near Urbana. The week-end of November 4–5, Dr. Margaret Ohlson, Secretary, attended the meeting of the Michigan Dietetic Association in East Lansing. Winifred Howard Erickson, Treasurer, served as representative at the Minnesota meeting.

Dietetics on Television. In Milwaukee, the Wisconsin Dietetic Association is sponsoring a television program on WTMJ-TV. Called "What's New in the Kitchen," the program is directed by Breta Griem, Editor of *The Wisconsin Dietitian*. Among the programs given thus far have been "Money-Saving Main Dishes," "Freezing and Preserving Late Garden Crops," and "Value of Fruits." On two programs given in May, two of the dietetic interns at Milwaukee County Institutions appeared as guest demonstrators. Matsuko Kawaharada and Kiyomi Kanegawa demonstrated the preparation of a Japanese dinner including steamed rice, kuri namasu (cucumber salad), and sukiyaki (beef and vegetables) on May 12, and the following week they showed how to prepare pineapple and coconut on a program featuring Hawaiian foods. Their recipes are included in the September issue of *The Wisconsin Dietitian*.

News of Advertisers and Exhibitors

The Public Health Committee of the *Paper Cup and Container Institute* has put out an interesting booklet titled "Paper Cups and Containers at Your Service." In it are descriptions of the varied types of paper cups and containers and information as to which ones are best suited for specific foods, beverages, and other purposes. In addition, there is an alphabetical listing of ninety typical foods and beverages and the paper item suggested for serving them. Sizes given are in the most instances for a single portion of adult size.

"Recipes for Serving 100 People" is the title of the colorful new folder put out by the *Maltex Company*. There are ten illustrated recipes using Maltex in the preparation of cereals, breads, cookies, and meats.

The American Can Company has purchased a 43-acre tract on the southwest limits of Baltimore from the Baltimore & Ohio Railroad as the site for a manufacturing plant to produce paper milk containers. The capacity of the new plant will enable the company to supply more paper milk containers to its dairy customers in the firm's entire Atlantic division.

S. Blickman, Inc., has published a new color catalog giving full details of the Blickman line of food conveyors with the new, sanitary seamless tops; tray conveyors; and service, dish, and kitchen trucks. General specifications applying to all Blickman steel food containers are given, followed by a double-page spread spotlighting the features of the "Selective Menu" conveyors. Illustrations and descriptions of other conveyors and trucks made by Blickman are also included.

Pfaelzer Brothers is now offering a new "Meat Buyer's Guide." Printed in two colors—red and black—the publication illustrates in natural color many of the meat products in the Pfaelzer line. Prominently featured are pages on the company's "portion-ready" meats, including many items which have not previously been made available to the institutional trade.

Quaker Oats Company has just released a large-size poster on oatmeal. A 20½ by 32 in. piece lithographed in red and black, this new poster shows a cross section of the oat kernel as well as enlarged drawings of flakes of both old-fashioned and quick-cooking rolled oats. Copy explains how each is made. Bar graphs also show the nutritive value of oatmeal, making comparisons with twelve other foods in regard to protein, iron, calories, and thiamine.

Duke Manufacturing Company has put on the market a trim, new kitchen work table. It features solid end panels and streamlined rounded corners, and it may be ordered with either laminated select hard maple or 14-gauge polished stainless steel top. Edges are rolled. Both tops are 30 in. wide and come in 5-, 6-, 7-, and 8-ft. lengths. The buyer has a choice of either polished stainless steel or baked-enamel-on-steel body. Legs are adjustable to the height desired and are fitted with bell-type feet.

To promote consumption of pork, which is now in plentiful supply, the *National Live Stock and Meat Board* has prepared a mimeographed set of "Pork Recipes for Quantity Service." There are twenty-two recipes, standardized for quantities of fifty or one hundred.

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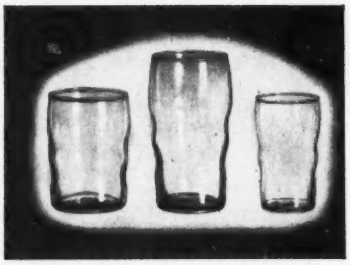

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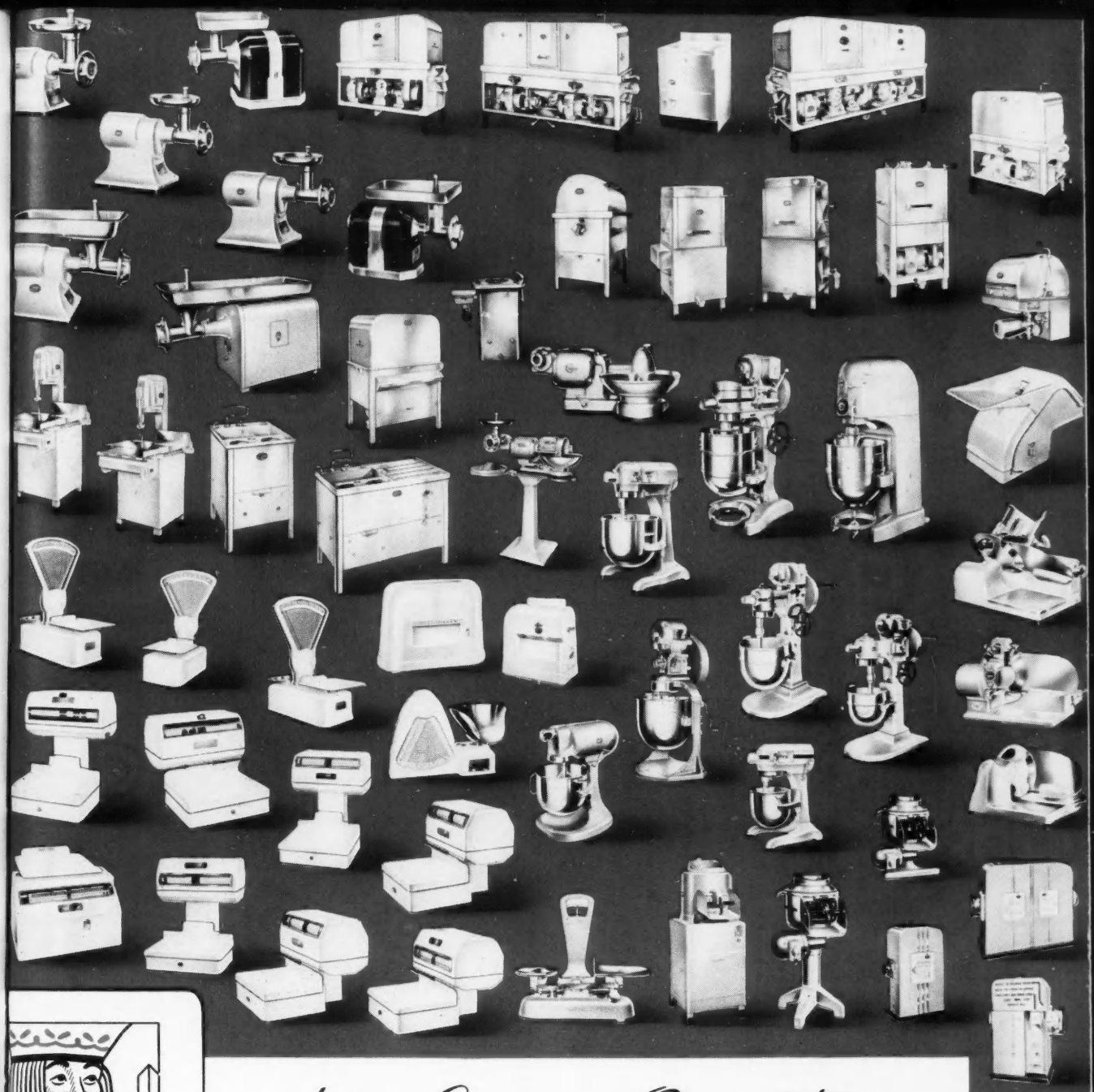

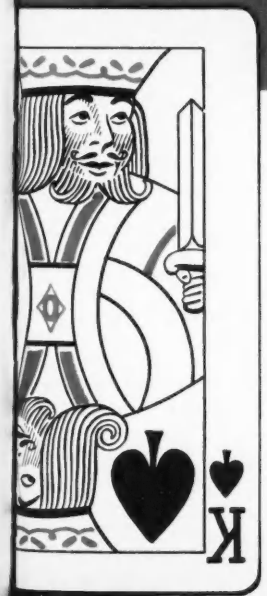

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